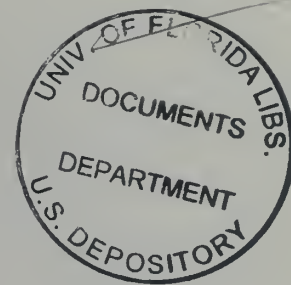


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Defense Management Journal

DOD COST REDUCTION AND MANAGEMENT IMPROVEMENT PROGRAM



Volume IV, Issue No. 4 **FALL - 1968**

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Defense Management Journal

(formerly Cost Reduction Journal)

Published by the Directorate for Cost Reduction and Management Improvement Policy, Office of the Assistant Secretary of Defense (Installations and Logistics).

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Cover photo—MACONOMY awards for logistics efficiency
in Vietnam.

See page 64

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THE PRESIDENT'S REMARKS *of October 8, 1968*

upon presenting Certificates of Merit for achievements in the Department of Defense Cost Reduction Program for Fiscal Year 1968

Secretary Clifford, Secretary Nitze, Secretaries of the Services, General Wheeler and members of the Joint Chiefs of Staff, Ladies and Gentlemen of the Department of Defense:

Every year since I became your President I have personally participated in these cost reduction ceremonies.

Ever since I came to Washington—now nearly 40 years ago—I have believed that good government also means efficient government.

There used to be an idea in this country that it was only the business corporations that knew how to be efficient. Government—the critics said—was wasteful by its very nature; all bureaucrats were bumbler and all civil servants were spendthrifts.

If that were ever true, it is not now. And one reason that it is not now is because of what you have done, each of you, here in this great Department of Defense, of which I am so proud and the Nation is so proud.

Today, the people from business corporations come here to your Department to study your managerial methods.

You have set new standards for the entire Federal Government. The great Chairman of our Civil Service Commission, John Macy, tells me fiscal 1968 is the third year in a row when the savings from employee suggestions have gone above the \$100 million mark.

Your Department has demonstrated that it can manage immense sums of money, that it can capably direct gigantic programs of procurement and it can faithfully administer the affairs of millions of servicemen and civilian employees—and you have shown that you can do all of these things and do them efficiently.

When I became your President, I asked Secretary McNamara and I directed this Department to procure and maintain whatever forces were necessary to safeguard America's security.

But I insisted that this be done at the lowest sound cost to the taxpayer.

That is exactly what you men and women have accomplished.

Your Cost Reduction Program has achieved audited savings of no less than \$13 billions of dollars since I came into office 5 years ago.

I think that is a magnificent achievement.

It happened because individual men and women, in every branch and division of this great Department, made it their personal business and their personal goal and objective to get their job done a little better.

It is the individual employee, thinking creatively about his own work, who gets the real results in a project like this.

That is why there is really no contradiction between an organization being big and an organization being economical.

Efficiency is a question of whether the people on the job are big or small—in their thinking—in their dedication—and in their sense of responsibility.

As you know, I have seen to it that the innovations that you in the Defense Department have made are now operating throughout the entire executive branch of the Federal Government. For that I express my gratitude to each of you for making that possible, and to Secretary McNamara, who gave you brilliant leadership for many years and to Secretary Clifford, in whom there is no better in the Federal Government.

Secretary Clifford informs me that your new Cost Reduction savings for fiscal 1968 exceeded \$1.2 billion—that is \$177 million more than the goal that you had established for this year. So today, here with your Nation looking on—on behalf of all the Nation's taxpayers—and I am one of them—your President has come to congratulate you.

Ladies and Gentlemen, I am very proud of you. I am very proud of the extra efforts you have made during the years of my administration.

We have done some difficult things together. We have done some easy things together. But we have never done anything together because it is easy. Whatever we have done together we have done because we thought it was right. The pressures of the moment, *(Continued on p. 48, PRESIDENT)*

The Comptroller General:

“STRENGTHEN AND IMPROVE THE PROGRAM”

The following is an excerpt from the statement given by Elmer Staats, Comptroller General of the United States, before the Joint Economic Committee of the Congress on November 11, 1968.

“AN AREA of special interest to us is the President’s Cost Reduction Program. In March of this year, I sent a letter to the heads of departments and selected agencies to express our interest in this Program and inform them of our plans to review, on a selected basis, the following aspects:

- Status of implementation of the cost reduction program.
- Criteria for measuring savings, including reasonableness, application of prescribed criteria, and consistency among and within the agencies in applying the criteria.
- Criteria and procedures for measuring changes in productivity.
- Responsibility and procedures for validation of savings and improvements reported, including testing of savings reported.
- Procedures for dissemination of useful information regarding cost reduction programs, especially concerning those practices and techniques which are susceptible to wide use in Government.

“We are currently reviewing the Cost Reduction Programs in the Department of Defense, Department of Agriculture, Department of Interior, General Services Administration, and Agency for International Development. We plan to issue an overall report to the Congress on the results of our reviews in the spring of next year. We are discussing and bringing to the attention of agency officials areas in which the Program can be improved during the course of our audits in order that immediate improvements can be made.

“We are maintaining close liaison with the President’s Advisory Council on Cost Reduction and the Bureau of the Budget in efforts to achieve our common objective—to strengthen and improve the Program—especially in view of the continuous increase in the scope and cost of Federal Government activities. To assist the departments and agencies in achieving effective internal review programs, we prepared for their consideration minimal standards for the audit or verification of reported savings under the President’s Cost Reduction Program.

“In view of the significance and long-range nature of the President’s cost reduction and management improvement programs, we plan to continue work in this area as found necessary in the circumstances.”



No longer going to sea for warlike purposes, the onetime U.S.S. "Worland," now the Advance II, is a floating classroom where maritime trades are taught.

SWORDS INTO PLOWSHARES:

—HOW DHEW USES SURPLUS PROPERTY—

TO MANY PEOPLE, the words "surplus property" convey ideas of junkyards, Army-Navy stores . . . and substantial losses to the Federal Government. Because of the Surplus Property Utilization program managed by the Department of Health, Education, and Welfare, in conjunction with the General Services Administration, however, surplus property more often means a reinvestment of national resources in health, education, and civil defense facilities.

The year 1969 will mark the 20th anniversary of a program through which \$6.7 billion (Federal acqui-

sition cost) in surplus property has been made available to schools, hospitals, and civil defense centers from Maine to California. This sum is more than a fifth as large as the total of grants made by HEW through all of its other programs.

Income from the program derives from sales of personal property items not needed in the agencies for which they were acquired, transfers of real property with discounts of less than 100 percent of the sale price, and abrogation of the conditions of transfer. The total income from these sources thus far comes to \$16.2 million while the total cost of administration reflected in congressional appropriations, stands at \$12 million, or approximately three-fourths of the income.

The average net return from sales of Federal surplus personal property has been but a few cents per dollar of

By WILBUR J. COHEN

Secretary of Health, Education, and Welfare

acquisition cost. While there is no way to determine the money value of donated personal property to health and educational institutions, undoubtedly such value would far exceed the estimated income of several hundred million if the properties that originally cost \$5.4 billion were sold rather than donated.

This is how the system works. Departments of the Federal Government report to the General Services Administration—the central procurement and property management agency for the executive branch—when they find themselves with certain kinds of properties they no longer need. While nothing is too small to be counted as surplus property, only the more expensive items like tracts of land, buildings, computers, and vehicles must be reported to GSA as the first step toward distribution. Smaller items move directly into distribution channels.

Most government departments do not have very large amounts of surplus property of any kind. It is only in the defense area that the turnover of material is large scale, continual, and rapid. Such turnover takes place because technological advances keep rendering military equipment obsolete. Furthermore, the needs of the armed services can change as fast as the international situation. This is why about 90 percent of the Federal property labeled “surplus” comes from the Department of Defense. The remaining 10 percent comes largely from the Veterans’ Administration, the Departments of Agriculture, Interior, and Treasury, and the General Services Administration.

Once a department reports a surplus to the General Services Administration, the GSA tries to find a use for it elsewhere in the executive branch. If, within 30 days, no other agency has indicated a need for it, GSA makes it available for screening by the Department of Health, Education, and Welfare. HEW is authorized by law to set in motion a process which results in placing the property wherever it can contribute to the Nation’s health, education, or civil defense.

HEW carries out its part in the process through 53 State agencies—one in each State and in the District of Columbia, Puerto Rico, and the Virgin Islands. The regional and Washington Offices of Surplus Property Utilization allocate the property equitably among the State agencies to the extent practicable. They, in turn, focus their efforts on keeping potential recipients up to date on what is available to them.

They do this by issuing catalogs, bulletins, and newsletters as new property is received, and also by maintaining distribution centers where representatives of eligible institutions can, like shoppers in a supermarket, look over the possibilities. At some center, would-be users can also review catalog listings that simplify the process of locating whatever they need.

State agency employees further promote the use of Federal surpluses by informal means. They check regularly on military installations and other productive

sources of surplus property and, in addition, keep abreast of health, education, and civil defense activities in their jurisdictions. As a result, they can often fill a highly creative role in bringing property and user together.

Defense officials help to forward the aims of the program in much the same way. By maintaining communications with both the State agencies and the Washington Office of Surplus Property Utilization at HEW, they keep themselves up to date on the needs of institutions concerned with health, education, and civil defense. Combining this special knowledge with what they know about defense properties which are to become surplus—and when—they can often lead the way in turning obsolescence into opportunity.

Once a school or a health center, a library or an educational TV station, a civil defense organization or some other institution within the prescribed category indicates a desire for a surplus item, acquisition is simple. There are only a few rules: the recipient must pay whatever moving and service costs may be involved in coming into possession of the property, and the property must be put to use in line with the purposes of the program. Beyond these requirements, freedom and flexibility in the use of Federal surpluses are encouraged.

Sometimes a surplus item or parcel of real property can fill a need “as is.” Hospital and other health facilities often need no more than a change of ownership to be put to use by State or local institutions. The same is true of many computers and related pieces of electronic equipment.

Where surplus property cannot be used in its original form, a very simple metamorphosis can often make it the raw material of community development. Not much needs to be done to make a classroom out of a Quonset hut, or a college dormitory out of an Army barracks building.

Sometimes, however, it takes a few repairs before surplus property is ready for service. There were, for example, the slightly battered desks acquired by the public school system in Westerly, R.I. They were refinished by students in the woodshop and, according to the assistant superintendent, “look as good as if one had paid hundreds of dollars for them.” In a great number of instances, surplus property finds its second usefulness as teaching material. Many a technical school owes all the machinery in its workshops to the Surplus Property Utilization Program. High schools instruct student drivers in overage Government vehicles. Junior colleges train aircraft mechanics on the engines of discarded military planes. But perhaps the most interesting uses of surplus property are those in which imagination and ingenuity transform a piece of overage or obsolete equipment into something else entirely. An Army jeep becomes a snowplow, clearing the roads for Rhode Island schoolbuses.



This giant spring that once helped send missiles into the air now gets school children off the ground as the base of a 4-passenger seesaw.

Jet engine containers are converted into watering troughs for farm animals at a school for delinquent boys in Florida. Steel bedsteads from abandoned Army barracks are reassembled to construct bleachers for an athletic stadium in Texas.

Whether it is a community college rising up on the concrete of an old military airfield or an empty post office brought back to life as a library, the effects of finding new uses for surplus property are far reaching. Not only do they involve the advancement of a specific educational or health purpose; there are also a host of secondary impacts on the economic and social life of the community.

Take the case of Kentucky's Lost Creek Hollow and the roadbuilding machines. At the center of the situation was Hazard Vocational School, established to train veterans at the end of World War II. All around it was need—the multifarious need of an Appalachian area where schools, roads, incomes, and chances for economic development were all poor.

With 60 pieces of heavy roadbuilding equipment—cranes, bulldozers, hilifts, shovels, graders, dump trucks, and the like donated by the Office of Surplus Property Utilization, through the State agency, a substantial change was set in motion.

Much of the equipment had been discarded because of the high cost of repairing it. At the Hazard School, the needed repairs became part of the curriculum, with trainee mechanics dismantling each machine and overhauling it as they learned its principles of operation.

Back in working order, the equipment was the means of training Hazard students in roadbuilding . . . and

of putting a badly needed 5 miles of road through an area previously cut off from the economic and social mainstream of life in the State. Results? For more than 200 young men, profitable job skills. For the children of four one-room schools, the chance to go by bus to a consolidated elementary school. For the sick, access to medical help. For the whole region, the release of energies that come with a sense of unfolding opportunities.

The values of surplus property to communities like this one are obvious. But, in the interest of the taxpayer, shouldn't such property be sold rather than donated?

It would be easy enough to sell the Federal Government's surplus property on the open market and, indeed this is what happens to items HEW does not succeed in placing with health, education, or civil defense institutions. But there is a strong case against selling surpluses HEW can distribute. While commercial sale of Government surpluses generally means no more than a small return on the original investment, it nevertheless involves prices that would keep the properties out of reach for many of the State and local institutions that receive them through HEW.

Thus the present system of surplus property distribution is, in effect, an additional channel for Federal aid; a reinvestment of national resources in the general well-being. Returns on this outlay are measured not only in numbers of students taught or hospital patients treated, but in the less tangible values of enhanced local initiative, improved cooperation among levels of government, and consolidation of national purposes. □

MILITARY SUPPLY MANAGEMENT:

A View From the Hill

By CONGRESSMAN CHET HOLIFIELD

Mr. Holifield represents the 19th Congressional District of California. He is Chairman of the Military Operations Subcommittee, House Committee on Government Operations, and Vice Chairman of the Joint Committee on Atomic Energy. Mr. Holifield is serving his 13th continuous term in Congress, having been first elected to the 78th Congress in November 1942.

THE CONGRESS gets involved in defense management in many ways. It enacts the basic legislation upon which the whole complex superstructure of procurement regulations is built. It authorizes yearly programs and provides the funds for their execution. It monitors performance and investigates complaints. In the Congress are heard many complaints by unsuccessful bidders, aggrieved subcontractors, and potential sellers seeking entry. You would think at times that the Congress is a source selection board, a board of contract appeals, or even a court of claims.

The point is, of course, that procurement impacts on the economy, on community welfare, on specific industries and occupations, all of which flourish or wither in the district of one Congressman or another. Contractors are even known to locate branch plants in districts where the chairman of a key committee or subcommittee might become a legitimate champion of their cause before the Pentagon for a sustained flow of Government business.

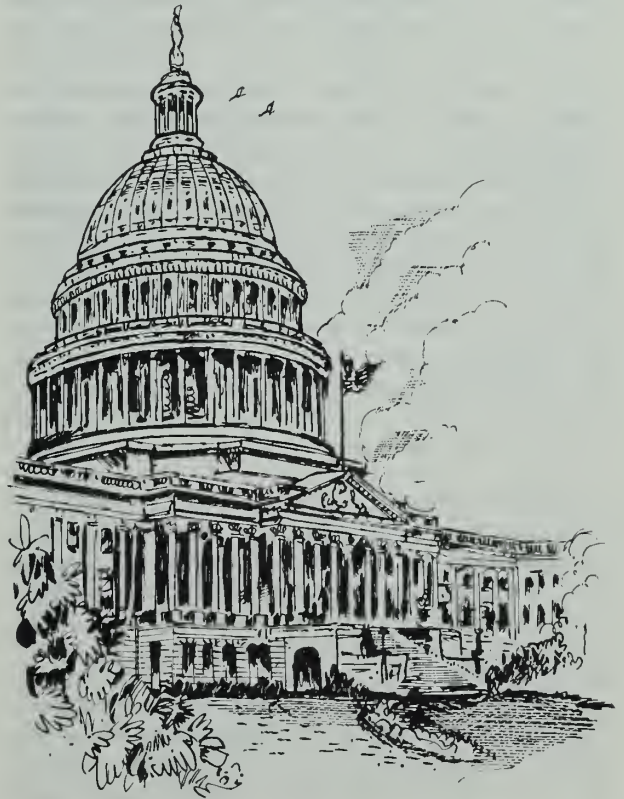
Military supply systems, which absorb the vast outpouring of military goods procured, are less visible to the Congress and hence less well understood—at least in problem terms. This is the realm of the commodity manager and the weapon system manager, who employ methods and terminology strange to the public and

“What is waste and extravagance to a member of Congress, remote from the intricacies of the administrative process, may be prudence to the harried supply manager trying to be responsive to urgent military demands.”

familiar to few members in the Congress. It is easier to lose sight of the taxpayer's dollar once the goods enter the distribution system. The contracts have been let, the items bought and paid for. But distribution costs are important too. Each purchased item sooner or later is cataloged, stocked, transported, stored, maintained, possibly reconditioned or redistributed, and if not used up, ultimately sold, given away, or scrapped. And if procurement is excessive because of unnecessary duplication of stocks or other inefficiencies, costs are compounded all the way along the supply chain.

Cataloging and Standardization

The sheer diversity of military goods is awesome. We are told that there are no less than 4 million separately identified items in military supply systems. This estimate undoubtedly is better today than it was before the Federal Catalog System became reasonably complete and maintained on an up-to-date basis. Some 20 years ago, as a member of the House Committee on Expenditures in the Executive Departments (now Government Operations) I was active in the fight for a Federal Catalog System as a basic tool in supply management. Unless and until the great mass and mix of names, numbers, and descriptions could be rationalized, supply systems never would be brought under control. And when I refer to a fight for a Federal Catalog System, I



mean just that. It took 10 years to establish the system. There was always a fight for funds, and a transient contest between DOD and GSA for management control. There were military service diehards and holdouts against central direction, and doctrinal differences among catalog experts. There were even a few unregenerate enemies of the accepted program. I trust their criticisms now are history and that we have a good working system today.

Logically, standardization would seem to follow cataloging, for when items are identified and properly described, and redundancies weeded out, those items that are sufficiently similar in function and use are candidates for standardization. The Military Operations Subcommittee, under my direction, has been a vigorous advocate of standardization as a means of reducing inventories and new procurement, simplifying supply operations, and saving money. The need to standardize extends, of course, beyond material things to processes and paperwork. The proliferation of items, the diversity of systems, and the rush of new technologies make standardization inordinately difficult, but a task that cannot be set aside.

Integrated Management

Again, our committee has been an advocate of integrated supply management through single-agency assignments and has watched their evolution into the Defense Supply Agency. The Second Hoover Commission, on which I served, proposed an agency along these lines 5 or 6 years before the DSA was established. I recall writing in 1955 some "additional views" in the Commission's report, "Business Organization of the Department of Defense," tracing the ideas for centralized supply and service activities which emerged from the World War II experience. Though supporting the Commission's proposal, I recommended clarification in the interest of a strong, effective agency.

The DSA, since it was created in 1961, has had its ups and downs, stepping on toes, working out kinks, but it is an institution which would have to be invented if it weren't already here. Of course, it must be continually improved. The commonsense proposition which energizes the DSA is that common item support of the military services, when centrally managed and controlled, enhances the efficiency of the supply system as a whole. I understand that more than 60 percent of the 4 million items in Defense Department inventories now come under integrated management, through either the DSA, single-manager assignments in the military services, or the General Services Administration.

The GSA Role

The GSA role in military supply is a story in itself. I sponsored the GSA bill and had charge of the subcommittee which handled the GSA legislation in 1949. How much policy control the new civilian agency would

have over the defense establishment was a complex question, finally answered by a compromise permitting the Secretary of Defense to exempt his establishment from GSA jurisdiction in procurement and supply management matters when national security considerations dictated and the President did not object. In theory the exemption privilege has been sparingly used; in fact, the GSA has had an uphill fight to persuade the DOD that a central civilian agency has something useful to offer to military procurement and supply management.

Our thought was, in the beginning, that a central civilian agency could provide many services for military users. True, military systems are complex and military readiness always paramount. But on a commonsense basis we knew that most military supply functions are performed with background noise from the whirl of air conditioners rather than the rumble of artillery. The combat role does not change the need for ordinary supplies and equipment to carry out routine functions. The military use davenports, paperclips, and typewriters in much the same fashion as the civilian agencies, and many loads of cargo hauled on trucks, ships, and airplanes to the far corners of the earth consist of ordinary, everyday items.

Slowly—and perhaps painfully at times—the GSA and the DSA have been working toward the concept of a national supply system in which each agency will procure and supply selected commodities, as economy and efficiency prescribe, for the Government as a whole. This means that the GSA will help the military, and the DSA will help the civilian branch of the Government. Compared to DSA's \$3 billion inventory and \$3.7 billion in yearly stock fund "sales," GSA's participation in military business is quite modest but still significant. GSA recently reported to my subcommittee that items worth \$513 million were processed from depot stocks in fiscal year 1968, of which \$378 million represented shipments to DOD.

As central management agencies, the DSA within the military establishment and the GSA outside have shared common problems of resistance by service and agency managers accustomed to doing things in their own way and always seeking self-sufficiency in the interest of quick response to their own users. There are complications in central agency support, possibly more aggravated in the case of an external agency than in an internal one, but these need not be defeating. Central supply management of common military items by DSA and of common commercial-type items by GSA, as the basic rationale for a division of labor, is becoming more accepted in practice.

Committee Attitudes

From the legislative side, committees approach these problems in different ways. In procurement and supply management, lines of legislative jurisdiction run from the Armed Services Committees to the DOD and from the Government Operations Committees to the

GSA. Both committees engage in investigative activities, with the Government Operations Committees having broader reach through their concern with economy and efficiency in military as well as civilian spheres. Other committees, such as the Small Business Committees and the Joint Economic Committee, also conduct nonlegislative hearings and studies on procurement and related matters from time to time.

The Armed Services Committees, charged with yearly authorizations for facilities and weapons, are policy and project oriented, solicitous of service autonomy, attuned to professional military opinion, and suspicious of systems analysis or cost effectiveness studies by civilian analysts. The Government Operations Committee, concerned with organization and management, with efficiency and economy at all levels, are perhaps more heedful of civilian opinions and more inclined to support integrative measures above the military service level. It is useful to recall that the military "unification" bill of 1947 was handled in the House by the Committee on Expenditures in the Executive Departments. Even in the case of the Department of Defense Reorganization Act of 1958, after the Armed Services Committee had reasserted jurisdiction, the McCormack floor amendment authorizing the Secretary to create single or central agencies for supplies and services was sponsored by a longtime member of the Committee on Expenditures, who is now Speaker of the House of Representatives.

The Appropriations Committees, in their defense involvement, stand somewhere between the other groups of committees. They have to work within the program authorizations and dollar ceilings set by the Armed Services Committees; and because they have to "pay the bill", they are always advocating management improvements to keep expenses down. However, the recurring yearly pressures of their work afford little time for broad and deep study of military supply management. Their enforcing instrument is the budget cut.

All committees depend to a varying extent on General Accounting Office investigations and reports either as raw material to be developed in hearings or as the basis for recommendations toward remedial action.

If the thrust of Government Operations Committee studies and recommendations over the years has been toward more integrated management, we have not recommended centralization merely for its own sake. In the Military Operations Subcommittee, at least, we are sensitive to the fact that overcentralization can defeat itself, that overmanagement from the top can be detrimental to the exercise of initiative and effective performance down below. We also recognize that the first necessity is to keep the fighting man well supplied and to keep the military machine well oiled for combat readiness in peacetime. The management problem arises in large part from the natural and inevitable tendency of military supply functionaries to err on the side of

oversupply rather than risk shortages. The management objective is conservation of material and economical use of resources without impairing the effectiveness of supply support.

Different Perspectives

To sort out the issues is not easy, particularly since judgments are made from different perspectives. What is waste and extravagance to a member of Congress, remote from the intricacies of the administrative process, may be prudence to the harried supply manager trying to be responsive to urgent military demands. The supply manager seeking worldwide "visibility" of stocks in the interest of rational and responsive distribution, may run up against the prerogatives of the theater commander who seeks to control his own supplies. This clash of management concepts particularly characterizes Army supply, as developed in our recent hearings.

Differing perspectives give rise to different evaluations of supply support effectiveness. For example, the depot that fills requisitions promptly gets a high score for efficiency, but if too many requisitions of ordinary items carry high priority tags, we cannot say there is supply management efficiency as a whole. In part the problem is one of developing acceptable criteria for evaluation of performance. James Forrestal, the first Secretary of Defense, once reported an observation of Senator Robert A. Taft to this effect: "He said there was a general impression in Congress of waste and extravagance in military spending because of the lack of any criterion by which efficiency could be proved or disproved."

If this is a valid generalization, it applies with particular force to supply management. Better yardsticks are needed for evaluation. What is an acceptable response to user demands for various classes of items? What stockage levels will permit rapid response with least investment in inventories? When military managers are able to answer these and many other questions in a reliable and persuasive way, the Congress as well as the Department of Defense will be able to get a better handle on supply performance, and perhaps criticisms of waste and extravagance will diminish in intensity.

Vietnam a Test

Combat is the ultimate test for military supply systems, and so Vietnam is the testing ground and the subject of constant questioning about the adequacy of supply support. Every war, of course, generates a cycle of scarcity and abundance. In World War II, as a member of the then House Military Affairs Committee on Expenditures, I was exposed to the problems of liquidating accumulated excesses. I sat on the Rizley Subcommittee in 1947 which heard horrendous tales of windfall profits and questionable dealings in the disposal of war surplus.

In the Korean war, again, the progression was from low-budget levels and shortages to hurried spending and excesses. Secretary Robert S. McNamara frequently has pointed to the Korean experience as an example of what he wanted to avoid in Vietnam. When shortages came with the rapid buildup and deployment of American troops in Vietnam, Gen. William Westmoreland made it clear that he chose quick deployment with austere supply, leaving abundance to "catch up" with the troops. In any case, we went through the same cycle, reaching an intensity of supply support characterized by the current delivery of 1,000 tons an hour to Vietnam.

In a visit to Vietnam early this year and in recent hearings the Military Operations Subcommittee reviewed the supply support situation and the efforts now being made to redistribute excesses and to salvage reparable equipment. The "push" of material to Vietnam to overcome early shortages has given way to the "pull" of redistribution and reclamation. The Department of Defense has acted with commendable dispatch to establish the necessary control mechanisms.

The larger and more basic question is, have the military supply systems been found satisfactory or wanting in Vietnam? Our distinct impression is that it was less the efficiency of the supply systems than the American resilience and aptitude for improvisation that made supply support to Vietnam so impressive an achievement. The Vietnam experience suggests that the unending streams of procurement actions will cut out their own paths if well-defined channels are not provided. The job somehow gets done, but done at much greater cost than would otherwise be necessary.

Looking to the Future

Recognizing that there are no simple, pat formulas to guarantee supply support effectiveness, I am sure that many lessons can be drawn from Vietnam by all the services. Certainly the supply job is too vast and costly for separate service handling and ad hoc adjustments. Supply systems must be better designed, with more central direction and control in the theater as well as in the States. It will be interesting to observe, in this connection, how the Army does in developing the model of a quick reaction inventory control center. As shown in our recent hearings, lack of uniformity

and standardization characterize the systems for automatic data processing, which differ within and among the services, with the Army having the most troublesome problems.

It is clear to me that the Department of Defense, and particularly the Office of the Assistant Secretary for Installations and Logistics, will have to take a firmer, more participatory, role in the planning and systematizing of data processing programs from the standpoint of supply management. I know that high-level attention to a common format for requisitions and other computer inputs has led to such standard systems as Milstrip and Milstamp, and that the Department also has been active in promoting the use of a common business language, COBOL, in computer applications. Much more has to be done.

Long-range planning is needed, not only for automatic data processing but for supply and logistics systems in the broadest sense, to keep pace with technological changes and new developments. While these developments will be assimilated by the services in varying ways, it is important to avoid the repetition of proliferating systems and incompatibilities between the services. The Department of Defense must take the initiative in guiding and directing the materiel plans and programs of the services in the interests of economy and efficiency. I am told that the Department of Defense is beginning to assemble some experts and start some planning in this area. It is an effort which would receive very high priority.

Looking down the road, I can foresee vast changes in military supply system concepts. The computer, already indispensable for supply support, offers more and more capabilities and marches increasingly closer to the scene of combat. The satellite relay in space orbit is opening up more communications capacity year by year. New giant transport aircraft are being built, and new cargo ships are planned for logistics deployment. These technical resource and expanding capabilities for sending messages, moving goods, and keeping accurate count and precise control of the many complex enterprises of the defense establishment, challenge the best brains and skills of our military managers. It is timely to think and plan not only how to improve what we have now, but to intelligently and fully exploit what will swiftly come to pass. □

"Experience has taught us that men will not adopt and carry into execution measures the best calculated for their own good without the intervention of a coercive power."—GEORGE WASHINGTON to JOHN JAY, August 1, 1786, *Writings* (Ford), XI, 53.

Three “E’s” at Commerce

ECONOMY—EFFICIENCY— EFFECTIVENESS

“While basic executive support is fundamental for a program, the real solution to indifferent or inadequate organizational response often lies in figuring out actions that do not depend on the chief executive or require him to do something extraordinary.”

WHILE PUBLIC service evokes a special kind of obligation to do the best job possible, public agencies are deprived of two powerful forces that constantly spur private industry to higher levels of productive efficiency: the drive for profits and competition in the marketplace. These are motivators with a vengeance.

The public executive’s motivators are no less real: the quest to meet the challenges of his nation’s government, and, sometimes, the opportunity to resolve unprecedented national problems. But these do not inexorably force equal attention to questions of organizational efficiency. The problems of attaining program goals—accomplishing the social purposes of a program—tend, by their nature, to elicit more attention than does the cost performance of the organization. This is not as it should be. “I want you to give as much attention to management as you do to your programs,” said President Johnson to his Cabinet in December 1963.

It was this comparison of the motivators in public and private administration that led Commerce, in 1964, to introduce a special mechanism for bringing about planned attention to management improvement. Called the “3-E Improvement Program”—for Economy, Efficiency, and Effectiveness—the idea was to establish a motivator that could, to a degree, stand in the stead of the motivators of profit and competition.

The program is a comprehensive effort comprised of: *economy* projects—those that will reduce dollar costs for a given program or result in the elimination of an

activity; *efficiency* projects—those that will produce work faster or save many individuals small increments of time; and *effectiveness* projects—those that will qualitatively improve the Department’s end products and services. From the start, “3-E” has also provided Commerce with the type data, goals, and accomplishments required under the President’s cost reduction program of 1965.

There are four special features that may make our effort somewhat distinctive when compared to other programs of this nature:

- Its comprehensive objectives.
- A 3-percent improvement goal.
- Tight and meaningful criteria.
- Identifiable budgetary benefits.

I. The Comprehensiveness of the Program

“3-E” is more than a cost reduction program. Its inclusion of improvements in “effectiveness” acts as a sort of gyro to avoid an imbalance of overemphasis on cost reduction. Because the national goals of an agency must be attained, every reasonable effort must be made to accomplish them expeditiously, courteously, and completely. The public is concerned with the cost of its taxes, and it is equally concerned with the quality of the goods or services it receives in return. A significant improvement in the quality of service to the public—achieved within existing resources—can meaningfully contribute to the success of a program, demonstrate astute management, and enhance the worth of the agency.

By DAVID R. BALDWIN
*Assistant Secretary of Commerce
for Administration
Department of Commerce*

This element of the program—the inclusion of non-dollar measurable improvements—helps us to stay clear of the criticism of overconcern for dollar savings and underconcern for program objectives, and it makes the program more realistically attractive to the line manager. For the public administrator, effectiveness projects serve to recognize that the quality of his agency's service, as well as the cost, is an essential factor if it is to stand up in the marketplace of public opinion.

II. The 3-Percent Improvement Goal

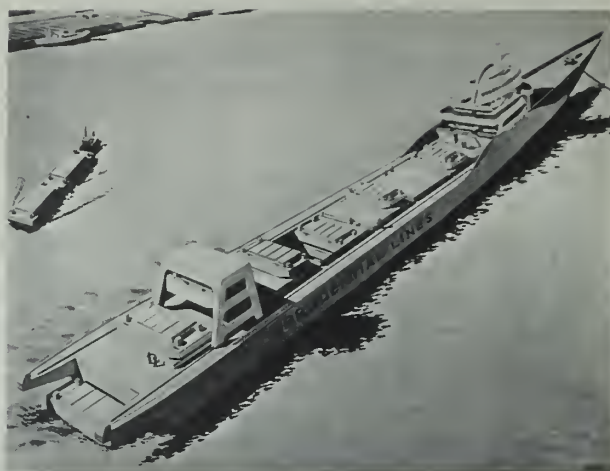
Policy governing the Commerce Department's management improvement effort is broad and flexible, designed to accommodate the highly diversified business of the Department.

This business is carried out through 14 primary operating units whose charter dates range from 1787—the constitutional birthdate of the Census Bureau and Patent Office—to this year, 1968, when the Office of Foreign Direct Investments was established (to help resolve the balance-of-payments problem). The National Bureau of Standards, the Maritime Administration, ESSA—incorporating the Weather Bureau and one of the Nation's uniformed services (Coast and Geodetic Survey), the Bureau of International Commerce, and the Economic Development Administration are illustrative of the diverse nature of Commerce programs.

The missions of these operating units, self-evident in some titles, include the promotion of a healthy American economy and the development of basic demographic, economic, scientific, and environmental data. They range from the improvement of engineering standards to industrial mobilization readiness planning; and from the promotion of foreign trade to the control of certain exports. They encompass the registration of trademarks, the development of atmospheric satellites, the fostering of a healthy merchant marine, and measurements of the earth and its oceans, to list a few.

The diversity in mission, character, and size means that the significant opportunities for improvement may be quite different from bureau to bureau. Focusing on particular areas across the Department—such as DOD does in its logistics management area—does not have the same high payoff potential in Commerce. Our policy, therefore, stresses the need of individual bureaus and offices to identify the programs, projects, or activities within their units which offer the best potential or greatest need for planned improvement during the year ahead.

To give the bureaus and offices some sense of what is realistically expected, the policy portion of our directive also states that “as a *minimum* desired goal,” the Department seeks “measurable dollar savings



Prudential Lines artist's conception of lift-on lift-off barge carrying ship called LASH (lighter aboard ship) being built for Prudential Lines and Pacific Far East Lines. The Maritime Administration contract for total of eleven ships was largest ever placed in peacetime, made possible by multiple ship order for two companies at the same time.

equivalent to at least 3 percent of its obligational authority for the year.”

This 3-percent improvement goal is not a quota. Rather, it is a sort of standard derived from our cumulative experience of what can be attained—with effort. It is a reasonable standard to which a Department of more than 25,000 people with an operating budget of almost \$1 billion can aspire. Some of the bureaus and offices have exceeded this goal. A few are still aspiring!

Departmentwide, I believe the 3-percent goal has been a contributing factor in the success of the program. It is not merely coincidental, therefore, that the cost reduction savings we reported to the President for fiscal year 1968 were equivalent to 3.03 percent of available funds, and that the fiscal year 1967 benefits were equivalent to 3.40 percent.

III. Tight and Meaningful Criteria

Tight and meaningful criteria for measuring improvement is probably the principal characteristic of “3-E”—as it must be of any managed improvement program. Planned management progress is meaningless unless it is geared to reliable measures of real improvement.

Most executives will acknowledge that an element of reporting competition develops whenever an agency-wide program is established, and that this commonly invites a search for things to report—rather than a search for things to improve. Hard criteria, integrity, and enforcement of the criteria can offset this tendency, but it is not a simple task. Firmness and a Sisyphian-like persistence will eventually discourage (or expose) the gamesman, and, more importantly, will convert the indifferent.

"3-E" Saves \$7 Million for DOD!

Dollarwise, the most important management project contained in Commerce's "3-E Improvement Program" of fiscal year 1968 saved more than \$7 million for DOD.

Maritime Administration, one of Commerce's major units, manages the operation (by commercial agents) of more than 140 ships, activated from the National Defense Reserve Fleet, to support Southeast Asia. MSTs provides the funds. When the vessels' daily costs began to inflate, Marad established a "3-E" project to try and control the situation. The project identified four of the principal cost elements: (1) Crew overtime; (2) subsistence; (3) stores, supplies, and equipment; and (4) maintenance and repairs.

The variety of steps included: study of requisitions from individual ships, to identify unfavorable trends and immediately caution the ship's master and commercial operator; regional procurement of stores on open-end contracts from Marad-selected suppliers in lieu of commercial operators buying from their customary ships chandlers; discarding the old waterfront custom of replacing every worn or defective part with a new one—substituting a "cost study" approach to determine whether a rebuilt or reclaimed part would suffice; and closer surveillance of outbound ships, including on board spot checks, to assure that the inventory of support items would meet the needs of the specific voyage and not the traditional "standard stores for 150 days' sailing."

Savings averaging \$117.49 per voyage day were achieved for a fleet-wide benefit totaling \$6,340,465. In addition, Marad cut the daily security, housekeeping, and demurrage costs of the ships on standby, or "reduced operating status," to achieve further savings of \$711,056. Total benefits: \$7,051,521.

In fiscal year 1969, using the fiscal year 1968 cost figures as a new and more stringent base, Marad aims for further cuts.

The criteria which serve as the core of the "3-E Program" are what we call "savings categories." We require that every improvement project having a dollar-measurable goal be categorized according to the type of savings action it involves. There are six of these categories, as shown in the following tabulation of our fiscal year 1968 cost reduction accomplishments.

Savings category	Planned	Accomplished
Program activities eliminated..	\$1,604,000	\$1,604,000
Cuts in ongoing costs.....	3,283,000	3,341,000
Gains in productivity.....	1,356,000	1,354,000
Future costs avoided.....	11,062,000	9,522,000
Increased rates of revenue.....	90,000	60,000
Cost control systems.....	5,143,000	9,337,000
Total.....	22,538,000	25,218,000

These categories are very carefully defined in the Department's directive, as illustrated below.

- "A productivity increase improvement is a deliberate management action that brings about an increase in productivity by a given organizational entity. For this category to be used, a reasonably valid measure of productivity; i.e., ratio of output to input, must be developed and the productivity gain must be relatable to concrete improvements. Savings under this category shall be calculated on the basis of the monetary value of the increased productivity (i.e., improvement in the ratio of output to input) for a 12-month period.
- "A cost avoidance improvement is a deliberate management action that prevents or reduces future new costs (including higher costs than heretofore experienced) which would otherwise be incurred. Savings can be claimed only if there has been a firm commitment to the required level of expenditures; i.e., the management action or improvement must involve an activity, project, or work which has been approved at departmental level or higher in the budget or other specific document."

As an integral part of our entire program, the categorization process also serves two other purposes:

- It helps our bureau heads and other administrators in their search for ways to improve operations, channeling their thinking and offering economy/efficiency cues when they examine their expenditures and review their activities. Some units of the Department have more opportunities for one kind of improvement than others, and the categories lend themselves to diverse missions. For example, the Patent



A modified B-57 aircraft, instrumented for weather observations, is used by ESSA's Research Flight Facility to obtain atmospheric data.

Office has a heavy backlog of patent applications.¹ Thus, steps that will increase the productivity of patent examiners and their supporting staffs are the natural focus of innovative efforts in the Patent Office.

- The categories also double, as it were, as definitions of the term "savings," and thus help avoid any misunderstanding as to the fiscal impact of a "3-E" project. For example, no hard dollars accrue when a legitimate future cost is avoided, but the action can be measurably beneficial. This was the case in 1968 when employees at the Environmental Science Services Administration developed a new way to transmit weather charts direct from their computer to the facsimile circuit without using a conventional automatic plotter (or "curve-follower" machine) in between. The impact of eliminating this step from the transmission procedure is quite clear when we note that the Weather Bureau had established plans for the replacement purchase of two new curve-followers (at \$60,000 apiece) in the near future. On this basis of avoiding a legitimate future obligation, it seems reasonable for ESSA to claim a "3-E" improvement worth \$120,000.

Having served the bureaus in the preparation of their Annual 3-E Plans and Semiannual Progress Reports, the definitions of the savings categories are also used by the Departmental Office of Management and Organization (OMO) in evaluating the bureau inputs.

The "3-E" validation process is marked by simplicity and stringency! OMO functions in its role as a staff unit for the secretarial officers, and in every 3-E Plan or Progress Report, each line entry²—a project with its description, category, and goal—is examined.

¹ The Patent Office receives almost 1,800 applications every week—a portion of the 1½ million pieces of mail it receives in a year!

² Like any program, 3-E has various "mechanical" requirements; e.g., at least 70 percent of a bureau's total dollar goal must be accounted for by individually identified actions referred to as line-entry projects. "Other actions," "minor proj-

The essence of the validation is to assure: (1) That an improvement, in fact, is involved; (2) that it rests on deliberate management action—not on happenstance or an externally imposed order; (3) that the action satisfies the definition of an applicable savings category; and (4) that any dollar measurable benefits are logically and accurately computed.

In a well-conceived and properly documented submission, the answers to these questions will be present. Where there are doubts, the burden of proof rests with the bureau. To save time and avoid paperwork, questions and requests for additional data are made by telephone. When the telephone proves inadequate and a major project (i.e., one having a dollar measurable value of at least \$50,000) is involved, an early conference will be held with bureau representatives.

If clear and logical answers are still elusive, OMO will eliminate the project in its entirety, reduce the amount of the claim, or set the project aside for the bureau to reconsider and satisfactorily redocument in the next reporting period.

This validation is admittedly harsh, but it can be no less if the extent of management improvement that is measured and recorded under the 3-E Program is to be genuinely meaningful to the Secretary, secretarial officers, bureau heads, and other officials with managerial responsibility.

IV. Defined Budgetary Benefits

Clear identification of the impact of the "3-E Program" on the Department's budget is the fourth feature of our management improvement effort. Thus, in addi-

(Continued on p. 41, THREE "E"s")

ects," and "miscellaneous" cannot exceed 30 percent, and generally are less than five! Even then, a project with a value as low as \$5,000 or \$6,000 must be supported by a project file maintained in the bureau and available for departmental scrutiny.

ECONOMY OF FORCE

Application in Combat Logistics

By MAJ. GEN. JOSEPH M. HEISER, JR.
*Commanding General, 1st Logistical
Command—Vietnam*
and COL. LOUIS RACHMELER
*Director of Retrograde and Disposal, 1st
Logistical Command—Vietnam*

THE WAR in Vietnam is being sustained today by the most responsive support base in U.S. history. The objective before us is also to make it the most effective, efficient logistical operation in any combat zone.

The economic and prudent management of resources in the combat area, while at the same time unstintingly meeting the soldier's battlefield requirements, may at first appear incongruous. But looking further, it becomes clear that the application of sound supply, maintenance, and transportation techniques and systems molds together the notions of responsiveness to combat requirements and efficient management of assets during war. Successful mission accomplishment depends upon the complete compatibility and integration of these techniques and systems.

Background

In 1965, the decision to commit major forces into Vietnam brought with it the need to establish a strong logistical infrastructure. Geographically, South Vietnam posed a formidable obstacle to the rapid establishment of such a support base. Over 10,000 miles separated the supplier and the user, while airheads and deep-draft port facilities and highways were either nonexistent or totally inadequate. Despite these major deficiencies, the difficult terrain and a hostile climate, the logistics system grew by bounds, to keep pace with the accelerated escalation of troop strength.

Since 1965, Army troop strength increased from relatively few to well over 350,000. Six deep-draft ports were completed. Through these ports some 300,000 short tons of material are handled each month. Depot complexes were built; many logistic activities are still in final throes of construction; monthly the depots issue 160,794 short tons of material.

During the early stages of the buildup, the Army was faced with increasing troop levels but had no established demand data base. Having to rely chiefly on automatic resupply or "push shipments" to maintain the required level of support, cargo flowed into Vietnam at an unprecedented rate. Support agencies such as the Army Material Command, Defense Supply Agency, General Services Administration, and others did a



Seventh Fleet tank landing ship U.S.S. "Vernon County" (LST-116) off loads equipment on a pontoon causeway at Chu Lai.

magnificent job of moving supplies to Southeast Asia. Unfortunately the logistical forces in Vietnam could not receive the supplies as fast as the CONUS agencies could ship. Inventories grew, some unrecorded.

Redistribution of Excesses

In 1966, a Department of the Army team was sent to South Vietnam to assist the Command in reviewing the logistical situation. Problems were recognized—in retrospect, *earlier* than in *any* previous conflict—and solutions were recommended. As a result, among the many initiated actions, decisions were made in early 1967 to retrograde supplies excess to the needs of the U.S. forces in Southeast Asia though not necessarily excess to worldwide requirements. Then in November 1967 the Secretary of Defense designated the Secretary of the Army as Executive Agent for the Department of Defense to assure that Southeast Asia excesses were identified and made available for redistribution (PURM).³ Commander in Chief Pacific (CINCPAC), was given the responsibility for organizing and operating a Pacific Command Utilization and Redistribution Agency (PURA). CINCPAC delegated the responsibility to the Commander in Chief, U.S. Army Pacific (CINCUSARPAC) who in turn designated the Commanding General, 2d Logistical Command, Okinawa, to establish and operate the PURM.

³ *Project for Utilization and Redistribution of Material in Pacific Area (PURM)*, Headquarters, Department of Army, Apr. 15, 1968.

The basic objectives of the system are:

- a. To promptly identify geographical excess material within the Pacific Command (PACOM).
- b. To screen and redistribute geographical excess material of all services to satisfy existing requirements within PACOM to the fullest extent possible.
- c. To establish policies and procedures for screening, utilization, and redistribution of retrograde material from combat areas in the future.
- d. To advise CINCPAC, departmental secretaries, and Defense Supply Agency when information and findings indicate ways and means of minimizing imbalances of supplies and equipment within geographical areas.
- e. To preclude procurement of items in an excess posture and disposal of excess items for which valid requirements exist; and to preclude expenditure of funds to ship items when required materiel is in place and available as excess.

In order to begin utilizing and redistributing known excess assets and not wait for computer programs and procedures for operational PURA to be completed, an interim phase was initiated in March 1968. As a result, some \$3.3 million worth of materiel was processed for redistribution. The operational phase of PURA is now in effect. PURA has received some 470,000 items as excess nominations from eight of the participating agencies. The dollar value of these assets is approximately \$144 million. Screening of PURA assets is to be extended to CONUS inventory managers and the U.S. Agency for International Development, thereby making it possible for the redistribution of assets from the Pacific theater to any other theater, worldwide. This Command automatically ships its excesses to Okinawa after making them available to all services in-country. In this vein, the 1st Logistical Command and the U.S. Marines in I Corps Tactical Zone have agreed to interface their respective supply systems to provide for the effective cross-leveling of stocks, particularly critical items. In fiscal year 1968, 93,068 short tons of stores were shipped to Okinawa. The 2d Logistical Command returned \$135,263,000 of this stock to serviceable supply accounts after identification, minor rehabilitation, and repacking.

PURA is in the process of maturing. The success in accomplishing its objectives depends largely on how well each service is able to identify its local excesses. Identification of local excess is a function of physical inventories, the reconciliation of materiel due into the inventory and materiel due out to the customer, updating of stocks records, and validation of requirements. These are fundamental hard core features of a managed supply system which, in turn, requires the timely integration of resources and management procedures under the control of fully trained personnel.

Closed Loop Support

The identification and retrograde of local depot excesses is but one facet of the entire retrograde program that is being aggressively pursued in Vietnam. Materiel for retrograde is also generated through maintenance channels. During fiscal year 1968, 166,177 short tons of reparables were shipped out of the country. A major portion of this tonnage represented our contribution to the Closed Loop Support Program (CLS).

In an effort to provide the optimum in logistical support to military forces in Vietnam, Department of the Army has established a program for the special management of selected critical items in the Army Logistics System. It is called Closed Loop Support. The fundamental principles of military supply and maintenance are clearly in evidence throughout this program. It is, however, unique in that it is a specialized management procedure wherein command and support elements are employed in a closely controlled network. Logistical functions, such as supply, retrograde, repair, overhaul, and return to Army supply channels are arrayed in a detailed schedule. This provides the means for insuring that critical major items and major assemblies are expedited through the logistics system back to an overhaul facility and returned to the command through the supply system.

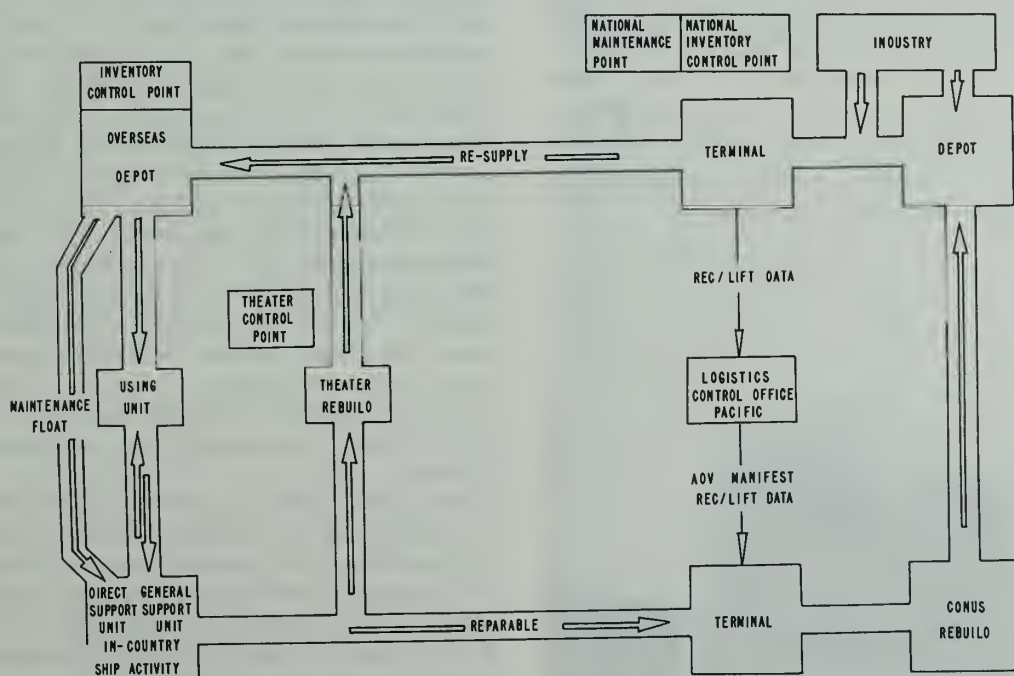
Closed Loop Support is defined as a totally integrated system of all echelons of maintenance wherein supply, repair, retrograde, overhaul, and return of selected critical items are rigidly controlled in a clearly defined net

(see Closed Loop chart). The objectives of Closed Loop Support are: to insure timely response to the needs of operational units; to exert more effective control of critical serviceable and unserviceable assets in the logistics pipeline; to reduce the backlog of unserviceables at all levels; to insure the timely availability of reparable assets at maintenance overhaul facilities; and to provide worldwide asset control of selected critical items in the Army logistics system.

In Vietnam using units generate unserviceable equipment. Those items of equipment beyond the repair capabilities of in-country maintenance units are evacuated to offshore maintenance facilities or CONUS. For example, Armored Personnel Carriers (APC), are shipped into Sagami, Japan, which has a theater repair/overhaul capacity to support U.S. Army, Vietnam. The overhaul of APC's in Japan reduces the supply system's cost of support of APC's by approximately 27 percent. Anything that is added to the system comes from CONUS procurement or redistribution of assets from elsewhere in the Army system. Once the system is filled with appropriate assets, the only leaks to the system should be combat and maintenance losses. In order for the system to sustain itself a loss to the inventory must be replaced in order to retain the status quo. In some instances, for example, tanks, assets must be delivered through the supply pipeline for the command to be able to retrograde unserviceables to the overhaul facilities.

The Closed Loop Support Program provides opportunities, among other things, to control selected assets

CLOSED LOOP RETROGRADE/SERVICEABLE MATERIEL FLOW





A U.S. Air Force CH-3C helicopter is shown here picking up an Army 105 mm howitzer to transport it from a rear area to the battlefield where it was needed to support Army operations against the Viet Cong. Within a matter of minutes after being airborne, this howitzer was blasting Viet Cong positions opposing U.S. Army 1st Division forces, Army of the Republic of Vietnam troops and elements of the Royal Australian Regiment engaged in operation Mastif in late March.

A tank landing ship (LST) of the Military Sea Transportation Service (MSTS) demonstrates its versatility as ammunition is loaded by crane and a truck is used to unload cargo in the ship's well deck. The United States Naval Ship (USNS) is at the LST ramp at Cam Ranh Bay, located approximately 165 miles Northeast of Saigon.



and to improve the condition of equipment. In addition, economies result from being able to repair and reissue equipment, like new, at from one-sixth to one-tenth of the original acquisition cost of the item.

Improvement of Support Management

The retrograde program in Vietnam is part and parcel of an overall program to provide support to the user in a combat zone as effectively and as economically as is practicable. There is currently underway in the 1st Logistical Command, a comprehensive series of projects designed to analyze, evaluate, and improve, where possible, every aspect of the supply system. Among the most important areas being considered are the automated supply management system, management techniques and procedures, depot and direct support unit (DSU) operational procedures, and the maintenance of an informative and comprehensive data base which can lead to timely and effective management decisions.

Automation

When the Inventory Control Center (ICCV) deployed to Vietnam in January 1966, a limited supply management system based on automatic data processing (ADP) equipment was designed and implemented in the ICCV and the depots. As commitments continued to increase, it became obvious that the system did not have the capability required to control the enormous quantity of supplies being used in the country. It was decided in the spring of 1967 that computers were required for the ICCV and at each depot; namely, Saigon, Camranh Bay and Quinhon. The first computer became operational at the ICCV in October 1967; the last one is to be received in October 1968 at Qui Nhon Army Depot. Card processing equipment was used previously. The major systems effort has been in the form of an entirely new system designed to utilize the latest developments in automated supply management. The system chosen for implementation was the U.S. Army Pacific Standard Supply System (3S) which has been in operation for some time. However, the system was modified to meet unique Vietnam requirements. The programing of the system modifications has now been completed and testing is ready to begin. During the last 6 months management personnel have been receiving executive training in the system at the 2d Logistical Command in Okinawa. A program for the lower echelon supervisors and commodity manager personnel is now being established in Vietnam.

The system, to be completed by the end of the year, will provide for the absolute management and control of theater stock, the development of requirements, and the acquisition of additional materiel through completely integrated subsystems at the depot and the ICCV. Under the new system, the depot will maintain detailed stockage data on the computer pertaining to location,

condition, and the history of the demand of each item, as well as complete files on outstanding customer back-orders, scheduled receipts, and the status of each. Additionally, other detailed catalog type data such as substitutable items, item weight, size, cost will be available in the computer for use by the item manager. The ICCV will maintain essentially the same data with emphasis on that information which allows for overall theater supply management. The computers at all locations will exchange management data making the overall system completely responsive to any combat demand anywhere in Vietnam.

Item Management

The ICCV initiated a program to standardize all stockage items that were amenable to such action. The most notable example of results achieved relates to paint. Prior to the review, 1,040 different types, colors, and sizes were stocked. This now has been reduced to 187.

Action is being taken to insure that only fast moving items are stocked in the forward support areas; those that are required less frequently are to be stored at the depots. The slowest moving items will be keyed to a specific depot, such as Camranh Bay. Prime transportation will be used to speed these line items to the customer.

Order and Ship Time (OST) represents the actual time required from the placement of an order to the receipt of stock ready for issue under normal conditions. Much thought and study is being given to the proper computation of the OST to insure that excessive quantities of any stocked item are not being ordered. The overall objective is to reduce the OST to a minimum thereby reducing the length of the supply pipeline. Recently the OST for the Meal, Combat, Individual, formerly known as the "C" ration, was reduced from 180 days to 165 thereby saving, on a one-time basis, \$2.4 million. Plans have been finalized for the use of Automatic Data Processing equipment in the computation of the OST for munitions. Presently it is being done manually. This transition may result in a reduction of 10 days (11 percent) of the OST for munitions. Likewise as our depots and DSU's become more efficient, reductions in OST between depot and DSU shall become more feasible. These are but a few of the many ideas being considered for implementation to streamline the system.

The hot and humid weather in Vietnam has had a very severe impact on the use of dry batteries. Life expectancy had been cut almost in half by the time they reached the user. This situation caused an increase in the demand for batteries. As a result, the requirement for refrigerated storage increased to the degree that it exceeded the onhand refrigerated storage capacity. A new procedure has been developed to solve this problem and is now being tested. Depot stockage is being eliminated except for a small emergency quantity; the

DSU and unit stock levels are being reduced to about a 12- to 13-day level. Action has been initiated to ship 10-day quantities of batteries in refrigerated boxes direct from the port to the DSU where the batteries are issued to the unit, as requested. When the refrigerated box is empty, it is returned and exchanged for a full one. In essence, dry cell batteries will be handled like perishable subsistence.

When a significant item comes to the attention of management as moving toward a critically short position or it appears that control of the item has been lost to the extent that shortages are developing and equipment is being deadlined for the lack of the items concerned, the item is designated as an Intensively Managed Item (IMI). Initially a complete inventory in all command depots is accomplished to assure the accuracy of the stock status records. This is followed by such appropriate actions as the initiation of additional requisitions, reconciliation of dues-in and dues-out, and the provision for special handling in the receipt and issue process to avoid any delays. These actions are supplemented by frequent and continual review of the item until it resumes a normal supply posture. In addition, this management "logistics intelligence" is fed back to all support agencies and to the National Inventory Control Points so that the entire logistical system can respond effectively.

As an adjunct to IMI, the Commander's Critical Items List has been instituted. Tactical commanders at brigade and division levels provide the Commanding General, 1st Logistical Command a periodic, semimonthly as a minimum, list of items that are particularly and peculiarly critical to them. These items then receive IMI treatment (at general officer level as far back in support system as is necessary to solve it) so as to minimize any impact upon the unit's combat effectiveness.

Depot and DSU Operational Procedures

Emphasis is being placed on the depots and DSU to follow correct procedures in the discharge of their responsibilities. Instructor training teams have been formed to act as advisers and instructors to the Command's supply activities. These teams are assisting the depots and DSU's in the receiving, storage, surveillance, issue, and stock control activities by determining where deficiencies exist and by training personnel on-the-spot in the correct procedures to be used. Training of military personnel in large-scale depot operations is being stressed more than ever. If our supply system is to interface with a sophisticated CONUS supply system without slippage, then the requirement for personnel with the requisite skills becomes extremely pertinent and their availability imperative.

Data Base

It is a well known fact that an automated system complimented with the best of manager personnel and procedures is no better than the accuracy of the data



A U.S. Air Force C-130 Hercules loads men and equipment aboard while other troops wait their turn to board. Air Force aircraft airlifted the 1st Brigade, 101st Airborne Division's "Screaming Eagles" from Kontum to Phan Rang air base. Planning of the airlift called for a 48-hour operation but the move was accomplished in 23½ hours.

available to the system. The 1st Logistical Command has undertaken Project "Count," a wall-to-wall inventory of its supply activities' stocks. The inventory program was initiated on August 28, 1968, is to be completed by January 15, 1969, and is designed to ascertain with a great degree of accuracy the stock status of the command stocks. Temporary duty personnel from CONUS, augmented by 300 soldiers from various U.S. Army, Vietnam, logistical headquarters and activities have been organized into teams and trained in inventory procedures and techniques. *Project Count*, the inventory of approximately \$1.8 billion worth of stock in such a short period of time, is truly a monumental task. Moreover, combat support will be provided while the actual counting is being done. There can be no "Closed Door" inventory. The anticipated results will more than pay for the required Herculean effort; they will help purify the available data base at the ICCV.

Coincident with Project Count, the 1st Logistical Command's direct support and general support units have been directed to review their stock records for accuracy under Operation Clean; the review is to be completed by September 19, 1968. Initial reports reveal the cancellation by the DSU of requisitions for materiel worth millions of dollars. Located excess stocks resulting from the review are to be nominated for re-

distribution or retrograded out-of-country for further redistribution.

Efforts to improve the data base do not end with stock status data. Emphasis has been placed on reconciling customer back orders and ICCV back orders with the CONUS National Inventory Control Points to improve the accuracy and agreement of the files. These reconciliations are made quarterly, as a minimum. In order to reduce the input of nonessential items into Vietnam, all CONUS supply sources were directed by the Command in June 1968, under PROJECT STOP, to cancel, divert, or frustrate certain USAICCV requisitions, some dating back prior to June 1, 1967. Preliminary information indicates that shipments worth \$93 million were either canceled or frustrated in CONUS, a dramatic illustration of the dynamic integration now being realized all along the entire logistic system.

Summary

The situation in Vietnam is dynamic by nature. Yet the support situation has been stabilized to the degree that troop strengths have been stabilized. In this environment we shall continue to improve upon the best combat logistical support ever provided to the fighting soldier; concurrently we shall manage our logistical resources throughout the system to the extent that we will have applied to combat logistics, as never before, a basic principle of war—Economy of Force. □

CONFIGURATION MANAGEMENT

THE AIM of Configuration Management, like the larger processes of Systems Engineering Management and Logistics Management that it supports and serves, is to enable and facilitate the timely conversion of a military need or opportunity to hardware that will perform as required, and that can be produced, operated, and supported, as planned.

This article is a summary of Configuration Management as it has been established by the newly issued DOD Directive 5010.19 and as it will be implemented via DOD Instruction 5010.21. This Configuration Management policy will be applied to new contracts by means of four Military Standards and a specification which were developed concurrently with the policy documents.

What Is Configuration? The configuration of an item (or product) is a collection of its descriptive and governing characteristics, which can be expressed: (a) In functional terms; i.e., what performance the item is expected to achieve; and (b) in physical terms; i.e., what the item should look like and consist of when it is built. In practice, an item being developed is described and governed primarily by its intended functional characteristics (with some physical characteristics usually being specified). Following development, however, an item being produced for inventory is ordinarily described and governed by its physical characteristics.

What Is Configuration Management? Configuration Management is a discipline which integrates the technical and administrative actions of identifying and documenting the functional and physical characteristics

of an item during its life cycle, controlling changes proposed to these characteristics, and providing information on the status of change actions. Configuration Management is thus the means through which the integrity and continuity of the design, engineering and cost trade-off decisions made between technical performance, producibility, operability, and supportability are recorded, communicated, and controlled by program and functional managers.

Background. Prior to 1962, the management of systems and equipment characteristics—or configuration—was confined almost completely to controlling changes to production hardware via the approval of engineering change proposals (ECP's). Careful technical and management attention usually was given only to major design and engineering changes because of their visibility and impact on technical performance, and on program cost and schedule. However, other important problems were resulting from ECP's but were not given comparable attention because they were not so obvious, and because they did not impact quickly or directly on program objectives.

Configuration-related problems were most evident in programs for the production and deployment of large, complex systems. This led the Air Force, in 1962, to establish for internal use the first comprehensive policy and procedural guidance on Configuration Management (AFSC Manual 375-1). In 1964, this manual was revised to incorporate the experience gained in its use, to improve control of item configuration during the

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development phase (since achieving approved item characteristics was the basis for program approval), and to provide exhibits for contractual application in development and production. Similar guidance on configuration management was issued by the Army in 1965 and by the Navy in 1967.

Early in 1964, the Logistics Management Institute reported on its study of engineering change control practices. In addition to the finding that ECP's accounted for 20 percent of the dollar growth and 80 percent of all change actions (on the several large programs analyzed), LMI concluded that increased program costs were caused by failure to consider all the factors in making change decisions, by lack of uniformity in DOD change practices, and by the procedures in use failing to assure prompt change processing, decision, and implementation.

Later in 1964, at the DOD Conference on Technical Data Management, the Panel on Configuration Control/Change Control Documentation concluded that configuration management was essential to the successful accomplishment of major DOD programs, and that a large spectrum of development and production activities depend heavily upon a clearly defined and strongly supported configuration management system."

In June 1964, the Assistant Secretary of Defense (I&L) and the Director of Defense Research and Engineering jointly initiated a comprehensive effort to establish more effective techniques and to develop uniform policies, practices, and contractual documents for use in managing system and equipment configuration throughout the life cycle phases of development, production, operation, and support. This OSD/DOD Component effort, which included regular collaboration with all segments of industry via the Defense Industry Advisory Council (DIAC) and the Council of Defense and Space Industry Associations (CODSIA), has produced the policies and procedures necessary for effective Configuration Management. Many of these were adopted for use prior to formal issue of the policies. Emphasis now will be placed on their implementation, and on establishing the indoctrination and training programs that have been planned.

What kinds of problems were there?

- *The total cost and other consequences of ECP's were not known at the time of approval.* Many ECP's and approvals evaluated only the change itself. Little assessment was made of the modification kits and other spares that would have to be procured and distributed (sometimes to many locations), whether test, support, or training equipment would have to be modified, the extent of revision to operating and maintenance practices, workloads, manuals, etc. Since the "advantages" of the change were stressed, and its side effects were not known or presented, changes of marginal value were often approved.

- *Proposed changes were not evaluated promptly.* Other than changes to correct hazardous conditions, decisions on ECP's were frequently deferred. If a change was subsequently adopted, the delay caused larger retrofit programs, normally accompanied by higher costs.
- *Approved changes were not incorporated promptly.* Once approved, changes to items in production were normally made within a reasonable time. However, changes to items in operational use frequently extended over long periods of time, thus denying the user of the item the benefit on which the change was based. Moreover, operation, maintenance, and logistic support of the item all were made more difficult because of the "mixed inventory" that resulted.
- *Responsibility and authority for managing configuration was diluted.* Frequently, there was no single individual fully responsible and authorized to make and enforce decisions on item configuration. The prevalence of committee type action, requiring at least a consensus and sometimes unanimity, caused undesirable compromises and delays in configuration decisions. Additionally, it was difficult to retain the configuration commonality that made possible effective and economical production and cross-service logistics support of items procured for use by more than one service.
- *Specifications were inadequate for Configuration needs.* Guidance for the preparation of specifications was oriented to the procurement of standard production items, and thus was not adequate for the preparation of specifications to be used in the development and follow-on production of complex systems and major equipment. Methods were not provided for assuring that specifications to be used during development would be performance oriented; i.e., that they would describe functional characteristics of items. Consequently, important functional characteristics often were omitted or not adequately described and quantified, while unnecessary design constraints; e.g., physical characteristics, were prematurely specified.
- *Verified technical documentation was lacking when needed.* Policies and procedures in use did not assure that configuration technical documentation was accurate or that it matched the item it described. And this data frequently was not available at the time needed for change-related design and manufacture operations, for quality assurance and acceptance inspection, and, especially, for operational, maintenance and logistic support purposes.
- *The configuration of items in use was not known.* Procedures were not effective for identifying the approved configuration of items, or for determining the status of changes that had been approved or accomplished. Thus, real knowledge of the configuration of items in use often was not available, making

the maintenance and logistic support of the item difficult and more costly to perform. In some cases, the actual configuration of items, when deployed, mismatched with their operational interfaces, with serious effect on operational readiness.

- *Configuration practices caused misunderstandings and delays.* There were incompatibilities among and within the Military Departments in the configuration areas of policy, technical documentation, item identification (numbering), terminology, and ECP procedures. In addition to causing program misunderstandings and delays within the DOD, this lack of uniformity was particularly burdensome for the large number of contractors doing business with more than one DOD customer.

What is the gain to the parties concerned? The DOD and industry both will benefit from the new Configuration Management discipline since it was developed with a full understanding of the need for practical solutions to the problems being experienced, and for an effective means of preventing their occurrence in the future.

The responsibility and authority for Configuration Management is now established clearly for all items, whether intended for single or joint DOD component use. DOD and industry will know who to look to for decisions and information. When configuration managers tailor the policies, procedures, and techniques that have been established to the complexity and life-cycle phase of the particular item to be managed, we can expect:

- Maximum latitude during item design and development, yet timely depth of configuration control needed for production and logistic support purposes;
- Earlier and accurate definition, documentation, and tracking of functional and physical characteristics of items;
- Availability of verified technical data at the time and for the purposes needed;
- Quicker approval and implementation of worthwhile ECP's, waivers, and deviations;
- Increased operational effectiveness of deployed items, and improved logistic support at reduced total cost;
- Significant reduction in the number and variety of data, forms, and reports for managing item configuration.

What are the essential functions of Configuration Management? While the scope and detail of Configuration Management is tailored to a particular item's complexity, life-cycle phase, and quantity, these four functions are essential to managing an item's configuration:

- Identification and Documentation.
- Audit.

- Status Accounting.
- Change Control.

The Identification and Documentation function is to assure: (a) The systematic determination of all the technical documentation (specifications, drawings, and associated lists) needed to describe the functional and physical characteristics of items designated for configuration management; and (b) that these documents are current, approved, and available for use by the time needed.

The Audit function is the comparing of an item with its current approved configuration as described in its technical documentation. Two kinds of audits are made: Functional and physical. A functional audit primarily involves a review of an item's test data to verify that it will perform as intended; i.e., that its functional characteristics satisfy those specified in the item's technical documentation. For items developed at Government expense, a functional audit is a prerequisite to acceptance of the development effort.

A physical audit involves the matching of an "as built" version of an item with its current approved technical documentation to assure that the documentation is complete and suitable for use in follow-on production, for accepting items produced, and for operational, maintenance, and logistic support purposes.

Status Accounting is the means through which actions affecting an item's configuration are recorded, and are reported to program and functional managers concerned. The accounting function identifies an item's initial approved configuration, then continuously tracks changes proposed to that configuration as well as the priority, schedule, and progress of changes that are approved. Additionally, current information is provided on all other aspects of a change to a configuration item; e.g., other hardware affected, operating and technical manual revisions, modification kits and spares requirements, specification and drawing updating, etc.

Change Control is the most visible aspect of Configuration Management since the people in this activity evaluate and approve or disapprove engineering change proposals, as well as requests for deviation or waiver of technical requirements. The purpose of change control is to prevent unnecessary or marginal changes while expediting the approval and implementation of the worthwhile ones; i.e., those that are necessary or promise significant benefit to the Government. Such changes are those which will:

- correct deficiencies; or
- significantly improve operational effectiveness or reduce logistic support requirements; or
- result in substantial life-cycle cost saving; or
- prevent slippage in an approved production schedule.

In addition to change decisionmaking, Change Control includes the equally important functions of setting change priorities; i.e., Emergency, Urgent, or

Routine, and of assuring that necessary instructions and funding authorizations are issued promptly for approved changes.

What items are Configuration Managed? The selection of items to be configuration managed is determined by the need of the Government to control an item's inherent characteristics, or to control that item's interface with other items. Thus, configuration managed items may be large, small, complex, simple.

In a missile system, for example, the missile itself, its guidance system, and its operational computer program each would be configuration items, and would be so identified in a contract (all configuration items are). Such a complex system may well require a highly organized configuration management effort to assure that the results of the systems engineering—the technical performance and design requirements—are systematically identified and documented, audited, and controlled. In contrast, an item such as an electrical test meter (which may be procured for use in several systems) may require nothing more than specification control and acceptance inspection prior to entering the inventory.

A special case exists for items that are developed at private expense and procured "off-the-shelf." A decision to use a privately developed item recognizes that Government control of the item's characteristics can and will be limited to "form, fit, and function." This does not prevent the Government from testing (or examining test data) to assure that the item is satisfactory for its intended use, or from obtaining the technical data needed to service and repair the item.

When does Configuration Management begin and end? For items developed at Government expense, formal configuration management begins when the items are approved for Engineering or Operational Systems Development (Contract Definition, when used). If Contract Definition is conducted on an item, the configuration management of its sub-items is deferred until the definition is completed.

For privately developed items, configuration management begins when procurement for inventory is initiated. Whether developed at Government or private expenses, the configuration of items is managed until they are removed from the operational inventory, including operational reserve and storage.

Who is responsible for Configuration Management? A single individual in a DOD Component is responsible and authorized to manage each configuration item. Where a system/project manager is assigned for the development or production of an item, he is responsible also for managing that item's configuration. In other cases, an individual by name, or the head of a functional office, is responsible for managing the configuration of designated items.

Where more than one DOD Component is involved in the development, production, operation, or support

of an item, one designated Component is responsible for developing, negotiating, documenting, and implementing plans and agreements for managing the item's configuration.

What new aids does the Configuration Manager have?

- Authoritative policy and implementation guidance (DOD Directive 5010.19 and Instruction 5010.21).
- Criteria for selecting specification types for describing item functional and physical characteristics, and guidance for in-house or contractual preparation of these specifications (MIL-S-83490 and MIL-STD-490).
- Criteria and uniform practices for proposing, justifying, and approving engineering changes, waivers, deviations and methods for their implementation (MIL-STD-480 and MIL-STD-481).
- A comprehensive listing of standard data elements for tailoring the selection of information to be recorded and reported on item configuration status (MIL-STD-482).
- Uniform terminology and definitions for Configuration Management (MIL-STD-480).

How are existing Configuration Management policies and practices affected? The new aids impact to varying degrees on a wide variety of configuration management policies, practices, and procedures now in use. For example, at least 23 DOD Component documents have been identified as providing configuration management guidance to their activities for internal use. Some of these documents may be consolidated or eliminated; the remainder will require some revision to reflect the improvements intended.

For contractual application, some 70 DOD Component documents have been identified for use. Of these documents, 29 will no longer be authorized for use on new contracts; the remainder will be revised to be compatible with the new policies and practices.

Equally important, a basis has now been established to assure that any existing or new configuration management documents to be applied on contracts will be authorized by the Office of the Secretary of Defense prior to use.

Conclusion. The concept and principles of Configuration Management are not new. Primarily, what the DOD has done, with considerable help from industry, is to identify, assess, improve, and codify the logic and practice of Configuration Management, and to integrate it with the Systems Engineering Management and Logistics Management processes over the entire life cycle of systems and equipment. Rational procedures and a discipline have been developed for this purpose. The payoff, however, is that these techniques will improve our ability to achieve the operational performance and readiness we need at the lowest total cost. □

Educating Management at

THE NAVY MANAGEMENT SYSTEMS CENTER

HOW CAN you keep and recruit such an outstanding faculty? This is the question most frequently asked of the Administration of the Navy Management Systems Center. Unlike many of the service schools, the courses conducted by the NMSC are taught by a professional teaching staff, recruited for their background and their willingness to innovate and to explore better management methods. For example, the present faculty, 16 in number, have advanced degrees in econometrics, psychology, operations analysis, mathematical economics, political science, public administration, international economics, agricultural economics, engineering, and business administration.

Management Study Interdisciplinary

The reason for this diverse background in the faculty is the recognition that management and its study is interdisciplinary. Today's manager must have a knowledge of a number of related disciplines if he expects to survive and become successful in the midst of today's technological and knowledge explosion. Nor does it help to learn only a piece of the total educational requirement. Each of the pieces is intertwined and interlocked and to omit or to neglect any one of the links in the management knowledge chain is to greatly weaken the performance of the manager. Therefore the faculty must bring the whole range of disciplines to bear in the educational process.

Diversity in educational backgrounds does not necessarily provide faculty motivation. In fact, it could act as a negative factor in the absence of other positive elements. The Center does not consider that a faculty member is completely qualified for his job for at least 6 months regardless of the educational background and experience he brings with him. Each faculty member "takes the course" himself before participating fully as



Herrmann Hall, U.S. Naval Postgraduate School, Monterey, Calif.

a lecturer or a discussion leader. This means listening to all of the lectures and serving as an apprentice discussion leader in seminars. Those who are weak in quantitative background must develop sufficient knowledge to be able to cope with the lectures in statistics and mathematics and to solve problems required of the participants. The same requirement holds for those who are weak in other disciplines.

Team Teaching Used

The motivation comes from several sources. First, the Center uses a team teaching approach. Lecturers are dependent upon each other for continuity and clarity of subject matter. Consequently, almost every lecture is attended by the faculty, regardless of how many times it has been presented. In this way, the lecture material becomes well known (although it is constantly updated and frequently changed to meet new requirements or because the lecturer has developed new material). In addition, faculty members critique each other on presentation style, clarity, and relevance of subject matter. The author has been associated with a number of schools where peer critique would be frowned upon. In the Center, this practice serves as a motivator, rather than a detractor, of performance.

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The author is shown lecturing to Greek participants with simultaneous translation provided.

Another factor in motivation is the student body itself. As of January 1, 1969, the Center will have had 2,200 participants of whom 240 will have been from foreign nations. These participants rank from lieutenant colonel or commander to general and admiral and from GS-13 to GS-18. Approximately 350 of the 2,200 will have been admirals, generals, or GS-16 and above. The opportunity to work with high-ranking officers and civilians of the United States and foreign nations has stimulated high performance on the part of the faculty.

Finally, much of the motivation comes from the nature of the program. The Navy Management Systems Center provides an educational experience for its participants. As such, it is not tied to a specific approach or concept but seeks to provide the best possible management education available. As an example, the Center has conducted several programs for nations interested in establishing better management systems in their Ministries of Defense. Lectures in economics are prepared based on the economic problems of the country concerned and utilizing their statistics. As one of the faculty members of the Center has often said, "No one can 'Scotch tape' someone else's system on another activity and expect it to work."

Courses Evolutionary

The Navy Management Systems Center was established as a separate Naval Activity in February 1966, for the purpose of fulfilling DOD requirements for educating high-level military and civilian personnel working in planning, programing, budgeting, systems analysis, or resource management activities of Department of Defense components in the Office of the Secretary of Defense, departmental or agency headquarters, and selected major commands. The Center is located at the Naval Postgraduate School in Monterey, Calif. This has proved to be an ideal environ-

ment, both academically and climatically, for conducting the Center's academic programs.

The initial course, conducted by the Navy as executive agent for the Department of Defense, was the Management Systems Course. The DMSC evolved from a need exhibited within the Department of Defense for an educational program for high-ranking decisionmakers which would deal with concepts, principles, and methods of defense management as they concern planning, programing, budgeting, and related activities. As management and management systems are in a constantly evolving state, so the DMSC has had through its existence, few static elements. Change, and its management, is a pervading fundamental aspect of the Center's most current course offering.

The DMSC has several versions. The longest course, conducted eight times each year, is 4 weeks in length and is attended by military participants with ranks of lieutenant colonel, colonel, or commander, captain. Civilian participants have civil service grades from GS-13 to GS-15.

Concept Oriented

The objectives of the 4-week course are accomplished by taking an interdisciplinary approach utilizing lectures, discussions, case studies, and problem solving. The objectives focus on the development of knowledge and an understanding of the concepts, application, and techniques of Defense Management Systems. Concepts are considered to be highly important because they provide the basis for present action, future developments, and continuing improvement. In this course, the concern is not only in how the defense establishment is being managed but also in how the management can be improved.

Wherever possible throughout the course, applications to military problems are demonstrated and discussed. Despite the short tenure of the course, the participants are expected to become familiar with quantitative and qualitative techniques used in analytic decisionmaking. The purpose is to develop a systematic approach to decisionmaking, utilizing all the tools and information available to enhance the decisionmaker's intuition and judgment. This systematic approach to decisionmaking is then applied to strategic planning for future forces, implementation of strategic plans, and problems of operating defense systems.

During the 4 weeks, the participants will listen to seventy 1-hour lectures in micro- and macro-economics, quantitative reasoning, management theory, human behavior, cost analysis, effectiveness analysis, systems analysis, strategic planning, budget formulation, budget enactment, budget execution, management control, operations analysis, and resource management systems. Open seminar guest speakers are used occasionally to complement the lectures in certain areas but the lectures themselves must provide the continuity.

Six times during the last 3 years, 1-week courses have been presented to audiences consisting of flag and general officers and equivalent ranking government service civilians. Included in the total of 300 attending these courses were 25 representatives from NATO countries and the NATO International Staff. The basic objective of these courses is to present a broad overview of the Defense Management Systems from the top-level decisionmaker's point of view. Particular reference is made to planning, systems analysis, programing, budgeting, and resource management. The anticipated result of these presentations is an improved understanding of analysis and decisionmaking in the Department of Defense.

International Flavor

In addition to the 1- and 4-week courses presented by the Center, assistance has and is being presented to cooperating foreign countries and international agencies in the general area of defense management. In the past 2½ years, traveling teams comprised of faculty members of the Center have presented briefings, and 3- to 5-day courses of instruction to the Ministries of Defense of Italy, the Federal Republic of Germany, Canada, and the NATO International staff. In May of this year a briefing was given to the North Atlantic Council and the NATO Military Planning Staff.

During calendar year 1968, the Center will have conducted 2-week programs for the ministries of Defense of Italy, Greece, and Turkey, at Monterey. The purpose of these programs is to provide these countries with an orientation and basic background to modern management methods. The lectures are given in English and translated simultaneously into the language of the country involved. Insofar as possible, relevant statistics of the Nation's economy are used and discussions on programing are conducted in a framework of Defense budgets and forces planned for the participating country. The purpose is to provide the country with an initial look at its possible programs as they relate to the resources available to that country.

Interchange With Other Service Schools

The Center has also been host for other service schools at a symposium on Defense Management. A 4-week symposium was held in 1966 and a 2-week program in 1968. The Center in each case has presented a series of lectures on defense management and discussions have been on the relevance of the material to each school's curriculums. The symposium has proved to be extremely valuable since it provides an opportunity to exchange information, classroom materials, cases, and teaching methods.

The Center launched a new 4-week course in October for Shore Station managers of the Navy and Marine Corps. The purpose of this course is to provide operating managers with the knowledge and expertise to run

multimillion-dollar shore complexes, utilizing the best management techniques available, within a resources management framework. The participants will primarily be commanding officers and executive officers of shore stations although some opportunity for participation by other senior staff personnel will be provided.

The new course will differ from the DMSC to the degree that more practical exercise in running shore stations will be provided. For example, the participants will be placed in a simulated shore station atmosphere throughout the course and will be required to make daily decisions about the operation of the simulated activity. They will also be expected to become familiar with computer programing, facilities management and financial management. Substantially more effort will be spent on human resources since this is of large concern to the shore station manager.

Educational Media

The Center faculty is currently conducting experiments in the use of various educational media to enhance the teaching program. One experiment which has proved highly satisfactory to date is the use of direct telephone question and answer sessions with the course participants and an expert in a particular field who handles the answers in his office. By combining this technique with a video tape presentation by the expert nearly all of the benefits of having the speaker in Monterey are achieved. For example, Assistant Secretary of Defense, Robert Anthony, made a video tape in Washington about 5 days prior to the scheduled telephone question and answer period. His presentation was given to the class participants the afternoon prior to the question and answer period and it served as the basis for the participants questions. The program was highly suc-

Foreign students engage in military planning game. Left to right around the table: Brig. Gen. Alexandros Papanikolaou, Mr. Konstantinos Mameletzis, Lt. Col. Christos Laliotis, Lt. Comdr. Panagiotis Giannakakos, Lt. Comdr. Emmanuel Vourexakis, Lt. Col. John Thodos.



cessful and Secretary Anthony was spared an expensive and time-consuming trip. With this technique, the Center can greatly increase its effectiveness at nominal expense by bringing experts to the class without having them leave their offices.

The use of video techniques is receiving attention in other ways. The typical class in any of the courses is quite heterogeneous in terms of educational background and military experience. Some of the participants have a substantial mathematical background while others have had little math. The same is true of the other disciplines. The Center faculty is presently installing a video tape system which will provide a small studio and monitors in each seminar room. Video tapes will be produced for both remedial and advanced work in each discipline. Participants can take a series of courses to either update or continue their education simply by spending a half hour or more each evening in a seminar room viewing a video program, either prepared at the Center or available from other sources. In addition, programed texts are used in a number of areas.

The Naval Postgraduate School is fortunate in having available an IBM 360-67 computer with a time-sharing arrangement. The Center has a remote terminal which permits classroom demonstration and student use as well as immediate access to the main computer by the faculty for research programs.

Research Program

Recognizing the ever present need for research in the various disciplines that comprise management development, the Center has implemented an extensive research program which permits each faculty member an opportunity to penetrate new areas of management thought and to expand present knowledge. Four man-years of scheduled research are planned for Fiscal Year 1969. Areas include research in cost and effectiveness analysis, long-range graduate education, the indentification of output measures, human behavior, and logistics management. Hopefully, this effort will not only support the teaching program at the Center but will also be useful to the world of management.

One of the principal reasons for the success of the Navy Management Systems Center and its programs is its location at the Naval Postgraduate School in Monterey. Since the courses offered by the Center are academically oriented, it is important to provide an academic atmosphere. The Naval Postgraduate School is ideally organized for this purpose. Library facilities, computer facilities, a distinguished civilian and military faculty, and adequate academic facilities provide an excellent environment for the participants. Short courses enhance the curriculum offerings of the Naval Postgraduate School, and make possible a mutually beneficial interchange of faculty members between the Center and the School. The participants, in addition to the benefits derived from the courses

gain from having available a wealth of reading material and also having an opportunity to share experiences in an academic atmosphere with their counterparts in other services and International defense ministries.

Center Strongly Supported

If there is a management gap between the United States and other countries as has been suggested by a number of authors, this gap is being narrowed at Monterey. The 240 international participants at the Monterey courses have come from 10 European countries plus Canada, Australia, and India. In addition, Center faculty have instructed or addressed over 350 international military and civilian personnel in oversea programs. These participants are highly selected and are extremely enthusiastic about the possibilities for better management in their countries. Planning, programming, and budgeting has already been introduced in a number of these countries.

In the final analysis, the success of the Center is a result of the cooperation of the Office of the Secretary of Defense, the Navy as Executive Agent, the Naval Postgraduate School, the faculty, and the participants themselves. The Superintendent of the Naval Postgraduate School, Rear Adm. Robert W. McNitt, is also the Director of the Navy Management Systems Center and is an enthusiastic and highly qualified supporter of the program. Under his guidance the Center expects to continue to search for better management methods and better approaches to management education. □

ABOUT THE AUTHOR

Paul Ecker has a B.A. in economics from Pomona College, Claremont, California (1949), an M.A. from Claremont College and University Center (1950), and a Ph. D. from Claremont (1967). His graduate research was in mathematical economics.

He taught economics and labor relations at San Jose State College from 1949 to 1951, and in 1951 he became Associate Director of the Institute of Industrial Relations at the college. In 1956, he was named Director of the Northern California Council on Economic Education.

He joined the faculty of the Department of Management at the Naval Postgraduate School, Monterey, California, in September 1957, and served as chairman from 1962-1965. At present he is Chairman and Executive Director of the Navy Management Systems Center.

He is the author of several articles, his most recent being on *The Use of Benefit/Cost Analysis in Management Decision Making* which was published in the "Italian Defense Journal," October 1968. He is coauthor of *Handbook for Supervisors*, published by Prentice-Hall, Inc.

Executive Development at

THE U.S. ARMY MANAGEMENT SCHOOL

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Executive Development Is Raison d'Etre

It has been said that the Army school system constitutes the largest educational and training institution in the world. Something on the order of 300,000 students each year pass through the 34 schools and colleges which comprise the system. Of these schools 26 are a part of the U.S. Continental Army Command—and the smallest of these is the U.S. Army Management School.

USAMS (short title for the school) is unique among its sister institutions principally due to its facilities, its teaching methodologies and its specialized mission—to make good managers better managers; i.e., executive development.

The Setting and Uniqueness

The Commandant of USAMS could not ask for a more ideal location. The school is situated along the Potomac River at Fort Belvoir, Va., just 3 miles below Mount Vernon. The city of Alexandria (9 miles away), the Nation's Capital (14 miles), the Pentagon and several military and civilian airports are all within easy commuting distance. There is thus good access to top-level managers at military headquarters and in both Government and industry to serve as guest speakers and consultants.

The Commandant has a second advantage in the physical facilities of his school. Its well-equipped classrooms, dining room, lounge, and sleeping quarters are all in one building—MacArthur Hall. Most students

¹The author wishes to acknowledge the able assistance of many of the faculty and staff at the school in preparation of this article, particularly Col. Chester H. Hancock, Director, Department of Management; Lt. Col. Paul C. Callan, Director, Department of Operations Research/Systems Analysis; Lt. Paul Nelson, Director of Plans and Research; and Mr. Murray Summers, Chief Editor.



The U.S. Army Management School, Ft. Belvoir, Va.

reside there during their stay and therefore have more time to discuss course material on an informal basis; and they also have more time during afternoons and evenings to discuss completed exercises and cases and prepare for new ones. The living areas, incidentally, are excellent. In fact, leaving course content and administration out of consideration, it could be said that its physical facilities alone make USAMS unique among Army service schools. Comparable facilities are seldom found, even at universities or in industry.

But the school's measure should be taken in terms of the many innovations introduced in classroom procedures. These innovations have proved highly effective in increasing student participation, learning satisfaction, academic growth, and pragmatic usefulness. In addition to the "around the clock" learning atmosphere provided by the "live-in" facilities, the following examples may give some idea of the deviations from normal military classroom procedures.

- All students are designated as "participants" and are required to wear civilian clothes at all times.
- First and last names (but preferably nicknames), without identification of rank or position, are used throughout the courses.
- Free expression of thought and opinion is encouraged in class discussions.
- A comprehensive guest speaker program features formal presentations by senior military and civilian officials. These speakers are drawn from the Office



The author (right) presents Dean James L. Hayes, Dean of Business Administration, Duquesne University, an Honorary Certificate which appoints him a professional lecturer in management upon his 48th appearance as a guest speaker at the U.S. Army Management School, Fort Belvoir, Va. (Photo taken while author was Commandant of the School, just prior to his recent retirement.)

of the Secretary of Defense, the military departments, Army major commands and installations, industry, and the academic community. An informal question and answer period follows each presentation, permitting further exploration or clarification of the speaker's remarks.

Brief History

When Col. John R. McClean, formerly an instructor at the Command and General Staff College and Professor of Military Science at the University of Wisconsin, became the eighth commandant of the school in August, 1968, he took over a job that, through the years, has become increasingly complex and expanded in scope.

Provision for the education of Army officers in installation management began with the establishment, in July 1954, of the Command Management School. Planning for such a school had begun in 1952 when Mr. Karl R. Bendetsen, then Assistant Secretary of the Army for General Management, pointed to the need for management instruction for commanders. In 1953, a firm of management consultants² proposed an Army school offering a 3-week management course patterned after the Advanced Management Program of the Harvard Business School and similar executive development programs. With the support of the Honorable Robert T. Stevens, then Secretary of the Army, the Command Management School became a part of the Army school system in 1954. The 3-week Command Management Course admitted lieutenant colonels,

colonels, general officers, and civilians in grade GS-13 and higher. A small number of Navy and Air Force personnel were also admitted, as is still the case.

The Department of the Army evaluated the school's progress in 1958, which resulted in several changes. "U.S. Army Management School" became the official name of the school. The original course became the Army Management Course, and a 1-week Army Management Orientation Course was instituted for general and flag officers and civilians of comparable responsibility. The latter course was offered 13 times between 1959 and 1964, including two classes held in Europe for colonels and generals. In 1960, the school conducted the first of its 1-week seminars for management instructors at other Army service schools. This was followed, over the next several years, by three other instructor seminars, two creative problem-solving seminars, and a series of short Resource Management System Orientation Conferences for commanders and principal staff officers.

In 1965, the management course was again revised and was renamed the Army Installation Management Course. For the first time, captains, majors, GS-11's and GS-12's were admitted in addition to higher ranking personnel. Beginning in February 1967, the school began conducting the 1-week Defense Family Housing Management Course in response to the concern expressed by the Department of Defense for the housing welfare of service families. This course continues to be offered to commissioned officers and civilians in grades GS-7 and above in all of the services and the U.S. Coast Guard. In January 1968, the school was further expanded in mission, faculty, staff, and physical facilities to accommodate a 4-week course entitled "The Operations Research/ Systems Analysis Executive Course." Operations Research/Systems Analysis is becoming an increasingly important field; the course is given to majors and GS-13's and above.

The growing pace at the school during the past 2 years is also evident when one analyzes student loads. The first year of operation (1954-55) produced 350 graduates; the annual average over the first 12 years was 520. During the last academic year (1967-68), 1,130 were graduated.

Today, in a year-round flow, graduates are returning to their posts and offices, not only to apply the latest management knowledge and techniques but also to acquaint their subordinates with them. And as more and more graduates are turned out, plans and research continue in the search for increasing the effectiveness of existing courses. In addition, a new longer course in general management for executives is being prepared which, if added to the curriculum, will become the school's fourth regular course.

Army Installation Management Course

Department of Army personnel serving in CONUS installations have an unparalleled opportunity to further

² Harbridge House, Inc., of Cambridge, Mass., then headed by Paul R. Ignatius (who is now Secretary of the Navy).

their personal development and improve their managerial skills by taking the Army Installation Management Course. Each class usually includes representation from the Navy, Marine Corps, and Air Force. A concentrated 3 weeks of instruction is offered to approximately 54 officers (captains through colonels) and civil service personnel (GS-11's and above), seven or eight times a year.

Small group discussions account for about 40 percent of the course hours. Each group of nine to 12 students has its own faculty adviser. Full-class participation accounts for about 60 percent of the time, which is spent in faculty-led lectures and conferences, closed-circuit television, films, and guest speaker presentations. Other methods used in either small groups or with the full class are case studies, role playing, in-basket exercises, and seminars. Summaries of the five main components of the course follow.

Management Concepts and Philosophy

The framework for more detailed study is provided by a keynote speaker (typically, the dean of a college of business administration) and a faculty lecture/conference on the functions and concepts of Army Management. Addresses by commanding generals of large installations and by officials from industry allow participants to compare contrasting and congruent management views.

In individual study, small-group interaction and classroom participation contribute to a manager's self-development within the framework of the course. In this process, participants sharpen their executive skills in such areas as communications, learning ability, perception, self-analysis, human factors, creativity, conference-leading, problem-solving, and decision-making.

The close relationships existing between the management of Army installations and that of other Defense agencies are covered on a selective basis. Areas of interest are the computer-based management systems now being developed by Headquarters, Department of the Army and the U.S. Continental Army Command; planning and decisionmaking at the OSD and DA levels and their expected impact on installations; the U.S. Army Combat Development Command's research into the Army of tomorrow; and logistic support by the Army Materiel Command and the Defense Supply Agency.

Instruction is aimed at providing a working knowledge of staff functions, activities, and problems in the effective use of resources and maintenance of readiness of combat units at the installation. Typical subjects are labor relations, family housing, facility maintenance, management of other logistics functions, personnel and manpower management, programing and budgeting, management improvement programs (including cost reduction), and unit readiness.

A management game type of exercise simulates the conditions managers contend with when they organize, plan, and prepare the installation program and budget. This exercise is supplemented by orientation in higher headquarters programing and budgeting procedures and fund allocations. A resource-structured war game provides practice in allocating resources on the basis of decisions backed by cost effectiveness studies.

Defense Family Housing Management Course

The Defense Family Housing Management Course was first offered in February 1967. Under the general guidance of Mr. John J. Reed, Deputy Assistant Secretary of Defense (Family Housing), it is open to DOD personnel with managerial and supervisory duties in family housing (commissioned officers and GS-7's and above). A substantial portion of the course is taught by a visiting faculty from the Office of the Secretary of Defense and from Army headquarters. Lasting 1 week, it covers in depth the important and often frustrating problem of providing adequate housing for service personnel.

Shelter is one of the primary human needs; the housing of military personnel is therefore one of the basic requirements of the services. The faculty recognizes that a requirement of such importance requires effective managerial efforts. Dynamic planning for military family housing requires that managers give creative and balanced consideration to the two facets of the problem: The construction of a building which is but a part of the overall task, and the housing of *people*, who must gain some measure of satisfaction or contentment from their surroundings.

BRIEF NOTE ON AUTHOR

Col. Francis A. Chamblin recently retired after serving as the seventh Commandant of the U.S. Army Management School during the period October 1966 to August 1968. He held the school's academic rank of Professor of Management.

Colonel Chamblin received his B.S. and M.B.A. degrees from Indiana University and is a graduate of the Army War College, the Army Finance School, the Army Management School, and the University of Pittsburgh's Management Program for Executives.

Before receiving his assignment to the Army Management School in June 1966, he served for 2 years as Comptroller of Headquarters, 8th U.S. Army, and Headquarters, United Nations Command/U.S. Forces, Korea. He previously had served as Commandant of the U.S. Army Finance School and just prior to that in the Office of the Chief of Staff of the Army.

Colonel Chamblin is now associated with the University of Tennessee at Knoxville, where, on September 1, 1968, he began his new duties as Associate Professor of Industrial Management in the College of Business Administration.

Outstanding among the features of the course are the Army, Navy, and Air Force workshops conducted by senior departmental action officers who would normally respond to correspondence initiated at base level concerning family housing. Informal discussion of common problems by departmental and base level personnel has resulted in a better understanding of policies and procedures published in regulations and directives. It also has resulted in family housing managers gaining a better understanding of the purpose and intent of departmental directives, as well as the restrictions and constraints imposed on the family housing program.

The Defense Family Housing Management Course has been extraordinarily successful during the short time it has been offered. The content of the course includes:

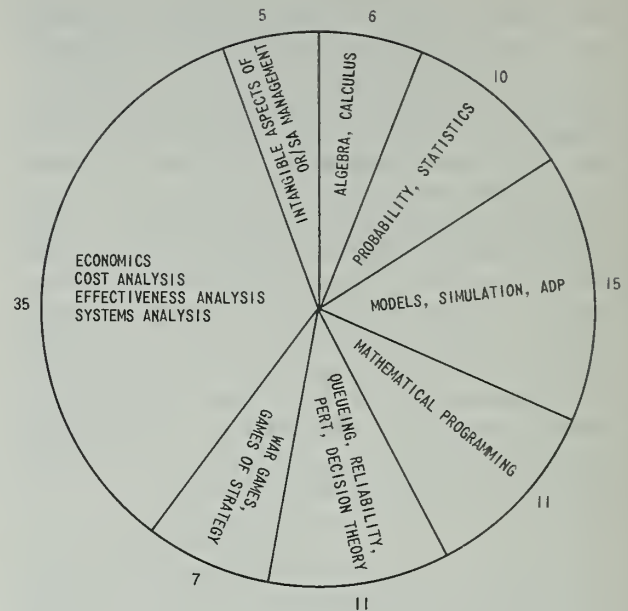
- **Management Functions and Techniques.** The duties and responsibilities of the housing management officer are outlined, with concentration on subjects such as cost reduction, management practices, the concepts and policy of housing management within the Department of Defense, communications, and human relations.
- **Administration and Utilization.** Military housing administration as a career is covered, with specific attention given to organization and staffing, assignment and utilization, inactivation and disposal, and furnishings and equipment.
- **Operations, Maintenance, and Budgeting.** This part of the course provides familiarization with the procedures of financial management, as well as operations and maintenance requirements, in housing management.
- **Construction, Requirements, and Sources.** Determination of requirements, sources of housing (including off-base housing and the equal opportunity program), construction programs, and special housing are presented.

Operations Research/Systems Analysis Executive Course

The purpose of the 4-week Operations Research/Systems Analysis Course is to provide senior commissioned officers and civilian employees of the Army (with a limited number admitted from the Navy, Air Force, and Marine Corps) with:

- An understanding and appreciation of operations research/systems analysis (OR/SA) techniques.
- Capability to manage OR/SA studies.
- Capability to evaluate studies critically.
- Capability to interpret the studies to decisionmakers.

The teaching methodology is divided equally between informal lectures and small-group (10 to 15 students) study and analysis. The subjects treated and the relative emphasis (percent of course) on each are displayed in the figure below. Not included in the figure is the required precourse study of algebra, probability, and statistics culminating in an entrance test.



Relative emphasis (in percent) of subjects in OR/SA Executive Course.

The subjects shown in the figure are taught in a highly applied manner through extensive use of military problems and case studies, some of which are presented by the experts who perform them within contractor and highest level staff organizations. The methodology of the other case studies developed by resident faculty members typically involves individual analysis followed by synthesis into a small-group critique, the results of which are presented to the entire class.

The table at the end of this article shows the military problems and case studies employed in a recent class.

From January 1968, when the course was initiated, through August of this year, there have been over 380 graduates. A new class, programed for 64 participants, is presented every 5 weeks the year round.

Army Executive Development Course (Proposed)

In August 1968, the school began developing a new 8-week course to prepare lieutenant colonels and colonels to assume high-level leadership and management positions within the Army. Whether the course will actually be presented is yet to be determined. Although patterned after executive development programs such as Harvard University's Advanced Management Program and the University of Pittsburgh's Management Program for Executives, the course would emphasize military problems and the various decision-making methodologies suitable for different functional areas within the Army at major command and departmental levels.

(Continued on p. 44, EXECUTIVE DEVELOPMENT)

BARRIERS TO VALUE ENGINEERING GROWTH

VALUE ENGINEERING techniques have been in active use for the past 20 years. These techniques have demonstrated their value to many companies. Yet value engineering has not reached the widespread level of use its proponents would like to see. Why have these proven techniques not gained broader acceptance? This article: (1) presents several obstacles which have hindered the growth of value engineering; and (2) suggests guidelines for overcoming these obstacles. Perhaps an awareness of, and solution to, these problem areas will permit the orderly growth in use of value engineering techniques.

Definition of Value Engineering

Although a relatively new concept, value engineering has come to mean many different things to many people. Definitions of the technique are plentiful, but most miss the mark by being either too broad or too all-encompassing. Furthermore, many of these definitions make value engineering synonymous with cost reduction in all its variant forms.

Thus, one of the major obstacles to the successful and widespread implementation of value engineering techniques is that of obtaining a single, good definition of what we are dealing with and talking about.

Most people agree that value engineers are essentially trying to relate cost to function without incurring a corresponding reduction in quality. But from this point on, the terminology is generally vague.

Proponents of value engineering must be more precise as to *what value engineering is* and *what value engineering is not*. This point becomes quite clear when one analyzes activities currently being undertaken at the Department of Defense. Here it has been

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and MR. PAUL N. ROMANI
University Teaching Fellow
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found that savings are being claimed by value analysts for work along cost-reduction lines that had been going on prior to the introduction of the techniques to that Department.

Such practices are not confined to DOD—they have become commonplace. For this reason, it is incumbent upon value engineering proponents to carefully define the scope of value engineering, and to delineate the boundaries within which it will operate.

Many people refer to value engineering as a “discipline” or a “profession.” Value engineering is neither a discipline nor is it a profession. (Whether it should be or will be is another question.) A discipline or a profession infers: (a) a requirement for advanced training and education; (b) a formalized system of rules for orderly conduct and efficiency; (c) a specialized body of knowledge; (d) acceptance of or submission to a central governing body; and (e) a minimum certified standard for admission to the field.

Some of these requirements to become a discipline or profession are being developed. The Society of American Value Engineers (SAVE) has played a role in advancing the field of value engineering. Perhaps this will become the governing body for value engineering as a discipline. However, until value engineering gets a more specific and precise definition and its area of contribution is properly limited, its growth will be limited and human relations problems will continue to occur.

Training Value Engineers

Value engineering training programs in existence today are not sufficient to meet present demands for qualified personnel since the applications of value engineering are almost limitless. This demand will continue to increase as more and more managements begin to exploit the multitude of cost-reduction opportunities which currently exist, straining further the value engineering talent pool.

If value engineering is to grow in both acceptance and stature, continued and expanded training for all value engineering personnel is mandatory. Currently, about 20 colleges and universities in the United States offer courses in value engineering. The University of California at Berkeley stands out as the leader among these, offering a professional certification program. Additional training is also available through the American Management Association, the National Defense Institute, and such private firms as Harbridge House and Louis Kingscott Associates.

Human Relations Problems

Because the human element plays such a critical role in the success of every value engineering program, resistance to value engineering must be *recognized* and *overcome*. For example, certain groups have expressed the fear that value engineering efforts could be downgraded into cost reduction *only*, which, in turn, would

be corrupted into quality reduction. Others have complained that value personnel have persistently attempted to assume credit for all cost-reduction activities—whether or not they were within the scope of value engineering. At the present time there is genuine concern among some engineers that value engineering is just a “ruthless, cost-cutting device” that could endanger the quality of end products. Also, certain engineering groups are concerned about what they feel is a “loss of status.” They contend that they are losing authority and prerogatives when their work is subject to the criticism and corrections of “outsiders” and “second guessers.” Finally, technical people believe that management doesn’t understand them or their function and will permit cost-cutting specialists to build little empires of their own, with veto power over engineers.

Such fears of a value engineering takeover must be dissipated if value engineering is to be successfully incorporated into more organizations. This problem can largely be overcome by dispelling any fear of criticism upon the part of a product’s original designer and by making it clearly understood by all concerned that value engineering must be considered an opportunity to *update* designs and plans. All employees must be cognizant of the fact that the value specialist acts only in an *advisory* capacity. In few cases does he make the final decision with respect to products or processes. His job is to supply information that will lead to more profitable decisions on the part of those responsible for making them.

Value Engineering and Proper Design

Besides being the subject of rather severe criticism in recent years, value engineering’s very existence has often been questioned. For example, there are those who believe that when a value engineering committee is put on the job, it is only doing the work the regular engineering section is doing, or should be doing. Such persons completely deny the validity of some of value engineering’s most significant cost reduction areas; i.e.: (1) the utilization of feedback data from usage tests or trial runs; (2) the possibilities of product or equipment revisions due to changes in the user’s needs; (3) changes in technology not apparent at the time of the original design; or (4) time and money restrictions imposed on initial design.

Other critics of value engineering feel that management has been ignoring the techniques of good design. Some skeptics say that if products were designed properly in the first place there would be absolutely no need for value engineering. Here, the rapid developments of the past few years in specifications, standards, and equipment via technological advancements and innovation are not properly considered.

Some people feel that the concept of offering an incentive to rectify a poor engineering design is practi-

cally and "philosophically wrong." These persons believe that the purpose of an incentive should clearly be to *preclude* poor design rather than correct the design in the postproduction period. Again, the employment of components, techniques, or processes not available at the time of the original design effort is overlooked, as are product improvements brought about by developments occurring in a dynamic environment.

Justified or not, the views expressed above do represent negative attitudes held by many persons in positions of strategic importance to value engineering. As such, they are of legitimate concern to those people who wish to see value engineering expanded.

Utilizing Supplier Expertise

Many firms fail to reach potential value engineering savings because they confine their value engineering activities to the "internal organization" only, and do not consult suppliers for new ideas. Such practices severely handicap value engineering programs. The alert value engineer can expect many of his ideas and innovations to originate directly or indirectly from suppliers—if relations with them are cultivated.

A company's suppliers are generally specialists. Therefore, it is only natural for them to possess knowledge of specific items superior to that of an organization's engineering staff, whose primary consideration is most often in the end product. For this reason many companies invite suppliers to participate in their cost-reduction brainstorming sessions while many others have come to realize that supplier know-how is one of their company's biggest assets. This seldom utilized asset is available to every company, regardless of size. Even the smallest of companies has hundreds of suppliers and each one usually knows far more about his specialty than do any of his customers. Consequently, it is the value engineer's responsibility to assure that this valuable corporate resource is employed to the fullest extent.

Implementing Value Engineering Proposals

Two other significant obstacles to the successful implementation of value engineering programs are: (1) a lack of active support, and participation on the part of top management; and (2) excessive time required to process value engineering proposals.

Management acceptance of the value engineering concept and a complete and sympathetic understanding of its goals are absolute prerequisites for a successful program. Most people would agree with this statement. But management must do more than just endorse value engineering and effectively place it in an appropriate organizational unit. Top company officials have the responsibility for establishing and vigorously pursuing definite cost-reduction goals. They should also provide value engineers with access to all company specialists to assure the utilization of the widest possible pool of knowledge in the cost-reduction effort.

Management should establish a system of prompt decisions on all value engineering proposals. This factor cannot be overemphasized. For this reason, the past few years have witnessed the development of many plans for overcoming the pitfall. One of these stands out as superior due to its simplicity and ease of application. In this approach, when a supervisor rejects a proposal he must submit a report to management explaining why he refused to implement the new idea. This method seeks to avoid proposal rejections for purely superficial reasons.

The defense department is trying to reduce the time required to process value engineering proposals to a bare minimum delay. Prompt action should encourage further growth of value engineering.

Insufficient support by top management, or delays in action on value engineering proposals, will severely reduce the possibility for expanding effective value engineering programs.

Summary

Value engineering techniques have been used very successfully by many companies. But value engineering has not reached its full potential. Before this potential is achieved several problems must be overcome. This article has suggested several of these problem areas, and has offered guidelines for their solution. Future uses of value engineering will be determined by the success value engineering proponents have in solving these problems. □

HI-HO SILVER, AWAY

Modern-day alchemists at Picatinny Arsenal, Dover, N.J. found their philosopher's stone in a mechanical fastener that replaces precious metal.

If the connection seems obscure, let it be known that silver solder no longer holds the barrel of the 60-mm gun to the undercarriage. Instead, a mechanical device that can withstand 13,000 pounds of pressure clips these components together.

The fastener not only shortens assembly time but it also assures higher reliability and wider tolerances than the soldering did.

The three go-getters who mined this silver-saving lode for a \$58,000 cost reduction are Messrs. J. Lepore, E. J. Beaumont, and Harry Simon.

The assembly technique may have government-wide application.

FROM MIL-STD-100 TO MIL-STD-100A

Economies in Standardizing Engineering Drawings

FIFTY SMALL changes in the standard for engineering drawings should produce big savings for Defense, according to industry spokesmen.

Engineering drawings cost the Defense Department close to \$1 billion a year. The exact cost is not known, but we do know that a 10¢ saving per drawing would give the DOD over a half million dollars to spend on something else.

Contractors prepare most DOD drawings today. Consequently, they know what the costs are and where these costs can be shaved. That is why industry's suggestions were a "must" in revising our basic military drawing practice standard MIL-STD-100.

The drawing business is painfully complex, and change does not come easily. The drafting that engineers learn in school is not the hard part. It is the engineering discipline that surrounds drawings and makes up the heart of a drawing system that is difficult to change—part and drawing numbering systems, number changes, references, types of drawings to be used in different situations, titling, information that goes into lists. Just the mention of one type of drawing—specification control drawings—at a meeting of drawing experts is enough to touch off heated debate.

Industry uses engineering drawings to manufacture parts and equipment. The Defense Department uses engineering drawings to buy, catalog, standardize, and maintain equipment and only occasionally for fabrication. As a result, our demands on drawing content differ somewhat from those of industry and we do not always see eye to eye on what is essential and what is not.

To industry, any information on a drawing that is not required for manufacturing represents wasted money. On the other hand, a Defense Department user feels that a drawing should contain all the information needed for his use. For example, industry would like to use whatever drawing title is convenient, but the DOD must have the official item name in the title if the item is to be cataloged so that it can be found readily again. The industry man would like to record on a drawing for a purchased part only the part number of his supplier. But the DOD would like to have listed as many suppliers' numbers as possible so that competition can be obtained with minimum research for equivalents.

It took over 2 years and several iterations, coordinations, and meetings to convert MIL-STD-100 into MIL-STD-100A and thus get as close as possible to an optimum balance between requirements and costs. In-

dustry sources praised DOD's unusual efforts to obtain industry viewpoints on the detailed requirements and attributed very significant cost avoidances to the results of face-to-face discussions between military and industry drawing experts.

Since the American Ordnance Association (AOA) acted as spokesman for the industry associations who helped with MIL-STD-100A, the Assistant Secretary of Defense (I&L) asked AOA to quantify these cost avoidances; 9 of 14 selected member companies responded to AOA's survey. In the aggregate, they estimated an annual cost avoidance of \$8.5 million in relation to an annual procurement base of \$1.2 billion. This figure of almost 1 percent can be applied to any dollar base for the procurement of systems or equipment involving the preparation of engineering drawings.

The kinds of changes made in MIL-STD-100A might seem picayune in their detail to anyone not intimately associated with engineering drawing preparation. However, there is good reason for each change. For example: The requirement that all sheets of a drawing be the same size was changed to permit variation when some are prepared by automated equipment; the requirement that a drawing show all contract numbers was revised to require only the contract number under which it was originally prepared; the detail assembly drawing was reinstated as a normal type of drawing. Approximately 50 changes of this general nature were made. The significance of seemingly minor changes becomes apparent only when each minor cost saving on a single drawing is multiplied by 5 million engineering drawings.

It would be comforting to believe that we will be able to rest on our laurels for a while, but MIL-STD-100A is not that kind of document. Computers are being used more and more in preparation of drawings and even as replacements of drawings. Even as this is being written, new changes are being considered. □

By **DONALD R. MITCHELL**
Staff Engineer

*Technical Data, Standardization Policy, and
Quality Assurance Directorate
Office of the Assistant Secretary of
Defense for Installations and Logistics*

Program Evaluation Review Technique

PERT FOR RESULTS

TO WEBSTER, "pert" means forward, lively, or bold in behavior. But to Fort Stewart/Hunter Army Airfield, PERT (Program Evaluation Review Technique) is the management system used in training Army aviators. Perhaps the two definitions are not as divergent as one might think at first glance for certainly the gradual but steady progress experienced has been forward, lively, and somewhat bold in its approach.

The Mission

Early in January 1967, a decision was made to establish helicopter training at Fort Stewart to accommodate an input of 200 students per month. The Army acquired Hunter Air Force Base to be used in conjunction with Fort Stewart. Military Construction Army funds in the amount of \$6.6 million were allocated. The U.S. Army Armor and Artillery Firing Center at Fort Stewart was redesignated U.S. Army Flight Training Center on July 28, 1967. The mission was assigned, and the fulfillment became our responsibility.

Time was short for careful planning for what we have commonly called the "aviation buildup." In 2 months the first class of students was scheduled to arrive and start training. This was where PERT entered the picture.

What is PERT? What does it mean? PERT, Program Evaluation Review Technique, graphically illustrates specific tasks to be accomplished in relevant functional areas involved in order to achieve an objective. The sequence of their performance, their interrelationships, dependencies on actions in other areas, and the amount of time required for completion is shown. Management is then able to evaluate progress and control the operation from start to finish. Delays and their effects are determined at a glance. PERT does not give the manager the decisions; but by applying the basic principles, it does furnish the necessary information on which to base decisions.

Any management system selected for a project should be tailored to the needs—not just blindly applied. PERT was modified to our needs. I will pass on to you our concept of application and some of our experiences.

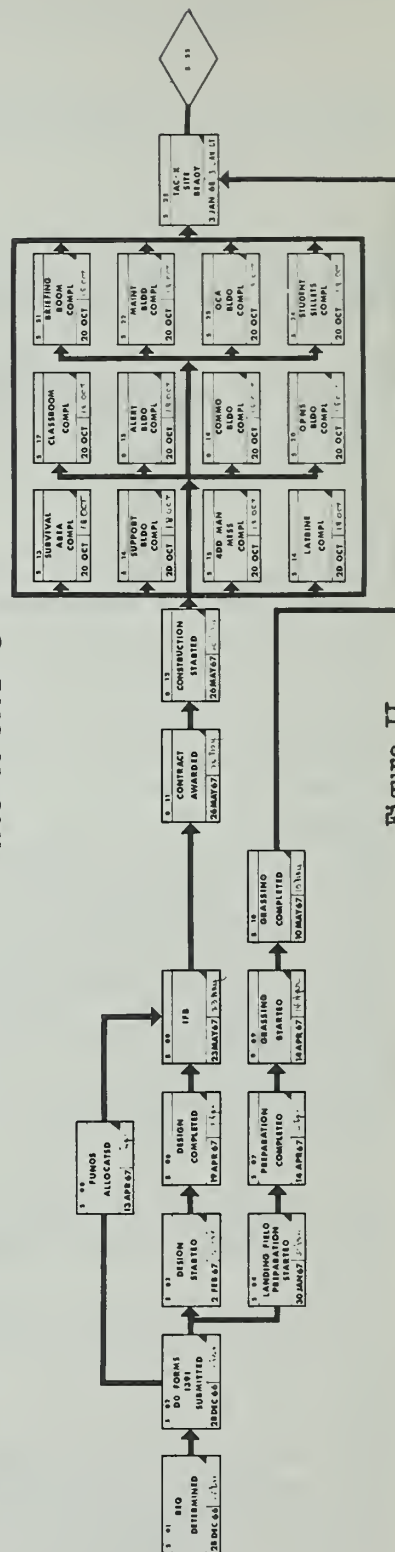
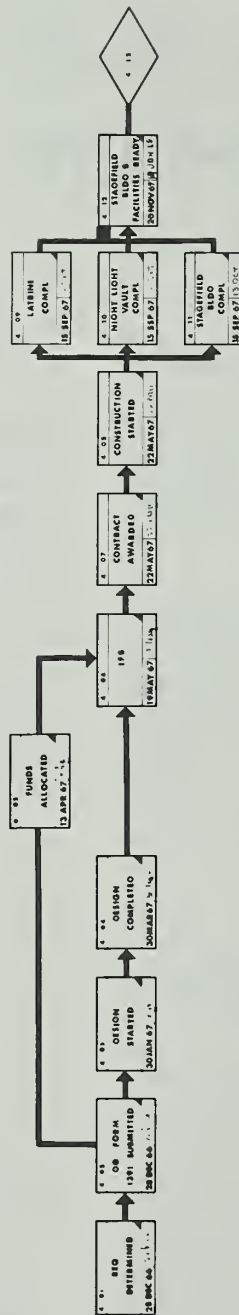
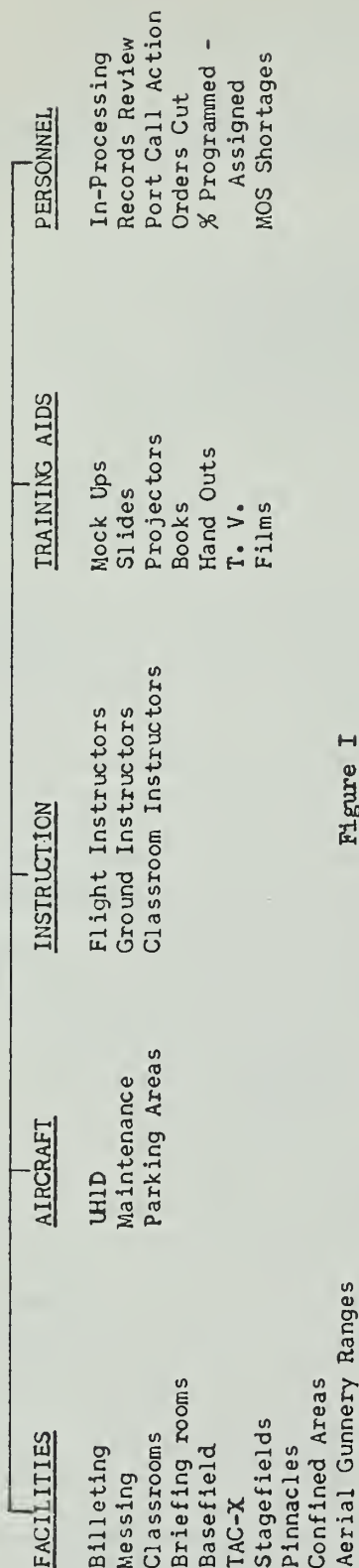
Six Steps to Success

The first step was to define the objective. Our initial effort was directed toward identifying the major tasks to be completed prior to the first class starting training on September 25, 1967, the requirements for the four phases of its training, and its graduation on January 30, 1968. This was our objective.

The second step was to develop a Work Breakdown Structure. This became the framework and showed the major functional areas involved such as facilities, aircraft, instruction, training aids, transportation, personnel, and supply. One person from each functional area was designated a PERT Project Officer. He was to serve as the focal point for information defining the work to be accomplished by his activity in performing the mission. The PERT Project Officers became a working panel known as the PERT Task Group. The thorough understanding of the capabilities and responsibilities within their areas resulted in complete planning being accomplished. The development of a Work Breakdown Structure is basic to every PERT effort. If PERT were to fail to produce the desired results, we believe the greatest single contributing factor would be the failure of the planners to go through this step. A portion of our

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(SCHEDULED START 25 SEPT 67)



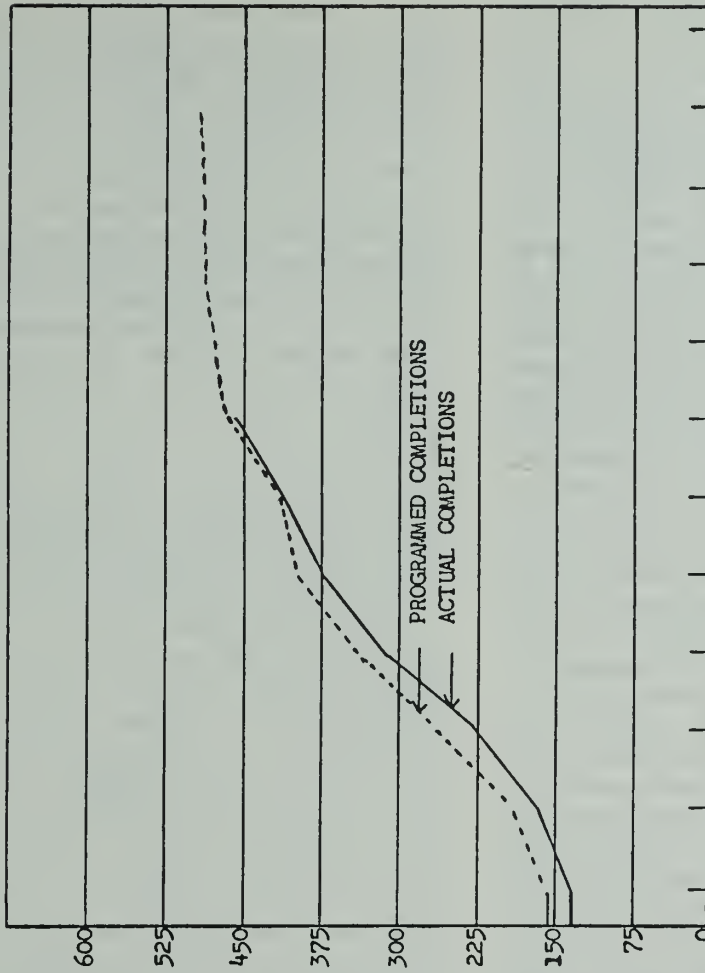
PERT
AVIATION BUILD-UP
SUMMARY

AS OF: 31 Jan 68

ACTIVITY SCHEDULE TO DATE

AREA	PROG	ACT	STATUS
PERSONNEL	37	37	●
AIRCRAFT	60	60	
MAINTENANCE	58	58	
INSTRUCTOR PILOTS	34	34	
FACILITIES	108	107	●
LINK TRAINERS	14	14	
TNG AIDS (TACTICS)	26	23	●
CRASH RESCUE	103	103	
OTHER	22	22	

● Problem Area



	J	A	S	O	N	D	J	F	M	A	M	J
PROGRAMMED COMPLETIONS	158	192	269	335	400	415	462	477	481	485	488	
ACTUAL COMPLETIONS	139	168	232	314	377	413	458					
ACTIVITIES BEHIND	19	24	37	21	23	2	4					
% PROGRAM COMPLETED	28	34	48	64	77	85	94					

Figure III

Work Breakdown Structure developed is shown in figure I.

The third step was to identify the tasks, in PERT called the "activities," to be performed in each area. This was not an easy job. To keep the planning in some sort of context with our objective required constant evaluation of the requirements. A question that was asked many times was, "If this action is not accomplished, will it make or break the training of the first class?" Here the technical knowledge and experience of the "specialists" were utilized to the fullest extent. As the actions were identified and expanded, they were laid out in logical sequence in the format of a network diagram. The relationship between the areas was then identified. For example, the link trainer building had to be ready before the trainers were installed. Trained instructor pilots, trained maintenance personnel, and class schedules must be on hand, together with mission-ready aircraft, for use by the students. The tasks were expanded to the depth of detail the Project Officers deemed necessary for their planning and monitoring responsibilities.

The fourth step was to estimate the time required to complete each activity. Previous parallel experience upon which to base the estimates was unavailable. Our procedure was to use scheduled dates. This was a summary of the time required for the completion of each event. We knew the first class would start training on September 25; therefore, we developed our plan for scheduling using this date instead of using the "three time" estimates. This was the major deviation from the "classic" PERT process. However, our system provided a means for reporting program progress and analyzing the effect of actions which were behind schedule. Each event was then assigned an identifying number for ready reference. A network for one area is shown in figure II.

The fifth step was the most time consuming. This was the coordination. As persons saw their individual tasks in context with the overall objective, much interest was generated. They could see upon whom they were dependent for action lest their part of the overall program be placed in jeopardy. Conversely, they could see the chaos that could result if they permitted any slippage in their responsibilities. Needless to say, the networks were reviewed to insure adequate coverage.

As with any system, the final step was to establish an information flow. Information had to be available which was focused toward program progress, not just information for information's sake. There was a need for vertical availability of data flow from the technician to the Project Officers and on to top management. In like manner, feedback information and guidance were needed. A reporting procedure was established to allow progress information to be reported. Interest was focused on such items as completions, slippages, additions, or deletions since the last re-

porting period. Knowing whether tasks were completed, if not—why not, action taken, and a "get well" date if available, provided the information for analysis. The analysis, coupled with sound judgment, provided a basis for decisions.

Hundreds of Events Monitored

Many alternate decisions were required during this short but intense period of preparation for the new mission. For example, a new heliport was required; but because of adverse weather conditions, it could not be completed on schedule. As soon as the problem became apparent, managers were summoned to select an alternate landing strip. When Anzio Range was established many years ago to meet the requirements of antiaircraft artillery firing, the primary mission of this installation at that time, little did anyone dream that one day it would serve as a landing strip to train helicopter pilots for modern warfare. However, very little adaptation was necessary, and once again preparation for the new mission was "all systems go."

A total of 488 events was monitored in the 16 areas PERT-ed. The networks were displayed in our Management Center and were updated periodically to show progress. They provided a "bird's-eye" view of the magnitude of the aviation buildup. This is what is referred to as program visibility. One can actually see the program in the networks. Once a month a chart was prepared to show the trend toward meeting our objectives on time. See figure III.

You may now be wondering what advantages resulted from "creating" this workload. The major advantage was a sure-fire indicator of the ability of personnel involved to do the kind of forward thinking required to execute a complex program in a short period of time. Secondly, a common language was developed for a large amount of data to be presented in an orderly manner. As a result it was easy to determine the latest date resources and facilities must be available to achieve our objectives, and many "imaginary" problems were eliminated. And last, we were assured the five management processes of planning, organizing, directing, coordinating, and controlling were performed.

The Future

PERT has proven its worth. We have completed our first major objective which was the aviation buildup in time to have the first class effectively trained. Our success with PERT does not end with this phase. Peak training of advanced helicopter students has not been reached. Our actions will continue to be planned and controlled with PERT. Through its application, positive management has been strengthened at all levels. The coordinated effort has paid dividends for all. Does PERT have my endorsement? My reply is an emphatic affirmative. I agree with Webster—it has been a forward, bold, and lively challenge. □

tion to the criteria I have already reviewed, it is required that all goals projected for dollar-measurable improvements be labeled "budgetary" or "nonbudgetary." The applicable definitions are quite explicit:

"Budgetary savings: Any anticipated savings which will be—

- a). applied to reduce the base of the appropriation involved (These savings shall be identified as such in the "Lead-off" Tabular Statement of the applicable Budget Estimate.) ; or
- b). specifically cited in a budget justification as the basis, in full or in part, for funding a program or activity.

"Nonbudgetary savings: All other anticipated savings."

The end result, achieved through close coordination between the budget staff and the "3-E" bureau coordinators, is that the Department's budget estimates submitted to the Congress show the dollar reductions to a bureau's budget base that are directly attributable to "management improvement (3-E) savings." Of course, these budgetary savings, which range from 6 to 10 percent of our total savings, are not the only hard dollars gained through the Commerce program, as illustrated by the "3-E" impact on MSTs funds brought out at another point in this article.

This review of the principal characteristics of Commerce's "3-E" effort admittedly reflects our pride in the program. However, the program is not without its problems; some comment on them is warranted before concluding this article.

Achieving requisite involvement of managerial and supervisory officials up and down the line is a perennial problem of cost reduction, zero defects, or other externally imposed programs. It is tempting to indulge in an old refrain and suggest that the solution lies in greater support from the top management. But, realistically, this is often not possible or practical. Executives have other things that demand their time. Some, by reason of their own particular executive bents, will force out more time for management improvement efforts, and others will have executive styles that will commit more of their attention to other aspects of an enterprise. While basic executive support is fundamental for a program, the real solution to indifferent or inadequate organizational response often lies in figuring out actions that do not depend on the chief executive or

require him to do something extraordinary. In other words, the quality of the staff work done on behalf of the program—at departmental and bureau levels—is vitally important.

There must be the kind of staff leadership that is convinced the program can make a significant contribution. The person with this responsibility must be at a level giving him easy access to an organization's principal managers, and must take special care to see that the program, as carried out in his organization, is true to the spirit and letter of its fundamental objective. Integrity is the key word. Unless the program and reports of achievements actually reflect true management progress, there is little hope that managers who are indifferent, lukewarm, or hostile to the program will be anything else. Nor should they be. There is some hope, however, if the program honestly helps the manager to assess the state and pace of improvement throughout his organization, and if it genuinely recovers resources which are otherwise unavailable to him.

It is not easy for the staff leader to adhere to these strict dictates. There is an understandable desire—from the manager on down—to make as good a showing as possible in the agency's report. Particularly when an agency's level of genuine improvement effort is low, there is a tendency to cast and report items which, though they result in less expenditure for items involved, are not actually improvements.

The "Achilles' heel" of all externally imposed projects and cost reduction programs like "3-E" is in this area of human tendencies—the desire to look good; the aversion to compliance, curtailments, and controls; the reluctance to indicate that present (good) management could be better; the rush for mission completion, not mission management; and so on. When pressure is exerted from a higher level of management to do more than is the natural bent or managerial energy of an agency, the staffman along with the administrator plays a key role in encouraging or preventing this kind of bureaucratic corruption of the program.

Fortunately, these problems are not common in Commerce. When they do sporadically appear, we deal with each according to its circumstances. There is no panacea. There is only persistence and a continuing alert for any such situation—as well as for any oversight or any crack in the door of indifference—to demonstrate the overriding essentiality of integrity and the practical value of managed improvement efforts such as the "3-E Program." □

INTERSERVICE LOGISTICS SUPPORT

By Ralph H. Beverly, Project Officer, DRILS Program, Defense Supply Agency

Once upon a time ye olde Army sergeant supplied the victuals that helped the Army travel on its stomach. He swapped and scrounged eggs, butter, donuts, fresh fruit, vegetables, and what have you. He was also equally adept at getting a vehicle serviced or a refrigerator repaired. The process is somewhat more sophisticated today, at least as effective—and certainly more respectable. The new way is called interservice support.

In Hawaii the Navy cleans and presses athletic uniforms for the Army. In Alabama the Army cleans, repairs and test-fires recoilless rifles for the Marine Corps. At Fort Sheridan the Army provides about \$100,000 of high-quality low-cost laundry service to the Navy Training Center, Great Lakes, Ill. The same Training Center supplies Fort Sheridan with \$60,000 in groceries each year. These actions, accomplished under Interservice Support Agreements, show how one Department of Defense activity obtains supply or service support from another.

Increasing numbers of Interservice Support Agreements are being made throughout the world under the Defense Retail Interservice Logistic Support (DRILS) Program. This program's basic objective is to promote interservice logistic support between field operating activities (bases, posts, camps, stations, and installations) of the military services, and other DOD and Federal Government agency activities. The term "retail" is used to differentiate between Inventory Control Points (wholesale) and the local operating level activities. The program is administered by the Defense Supply Agency.

Many types and categories of administrative, supply and logistic support are sought and provided in this program. Each recurring type of support is documented on a simple DOD form known as the Interservice Support Agreement (DD Form 1144). This form is used at base, post, camp, and station level. It clearly identifies the support to be provided and serves as insurance against future misunderstanding.

A common type of agreement in this program is the Host-Tenant Agreement. An example is the agreement between Ent Air Force Base and Army's Fort Carson—both in Colorado. In this instance the Air Force provides class 1 supplies (rations), petroleum items common to both services, utilities, and custodial, laundry and drycleaning support on a reimbursable (cross-service) basis. Occasions do exist however, when support is provided on a nonreimbursable (common-service) basis. This, of course, is a prerogative of the activity commander who furnishes the support.

A highly successful agreement was developed be-

tween the Tinker Air Force Base in Oklahoma and Fort Riley, an Army activity in Kansas. In a typical action under this agreement, the Air Force activity provided its paint marking machine to paint landing strips on an Army airfield in Fort Riley. This action saved the Army almost \$3,600.

In another situation, the U.S. Naval Ammunition Depot in Crane, Ind., has an agreement with an activity of the Defense Supply Agency to provide storage and warehousing services in support of the Civil Defense Fallout Shelter Supply Program. In addition, the U.S. Naval Construction Battalion Center at Davisville, R.I., agreed to process (for corrosion control and export shipment) all new USAF vehicles under the jurisdiction of the Air Force at Robins Air Force Base, Ga. Distance is no deterrent when support is needed, which upholds the old cliché "Help is where you find it."

Some kinds of support are unusual.

- In San Diego, Calif., the U.S. Navy Public Works Center has an agreement to provide water for the Fort Rosecrans National Cemetery under jurisdiction of the Sharpe Army Depot.
- The U.S. Army Map Service in Hawaii provides military topographic maps and related materials to the U.S. Navy.
- Some of the 67 interservice support agreements in effect among the Army, Navy, and Air Force facilities in the U.S. Southern Command, provide malaria and mosquito preventive measures, facilities for prisoner confinements, and cathodic protection services for fuel storage and distribution systems.



Technical Sergeant Conner (center) of the Air Force Precision Measurement Equipment Laboratory discusses the intricacies of VHF measurements with Sergeants Pierzella and Galarneau of the Marine Corps Base, Quantico, Va.



Inspecting an Air Force machine for pavement marking and paint striping of aircraft landing facilities are Kelly Air Force employees George Anthony, Ned Olguin and George L. Johnson. Cutting the cost of runway striping almost in half, this Air Force marking machine was also made available for Army use, most recently at Army landing facilities at Fort Riley, Kans.

DOD activities located in oversea commands; e.g., EUCOM, PACOM, and ALCOM are strong participants in this program. The types of support range from manpower for forest fire control to mortuary services. Benefits include reduced costs for supplies and services, expanded utilization of special purpose equipment, and effective mission accomplishment at reduced overall costs to the Government.

The Defense Retail Interservice Logistic Support Program accents flexibility. The decision to engage in interservicing is left almost entirely to the local commander of the activity involved to the extent that his capabilities and military requirements will permit.

One kind of support receiving increased attention these days is the repair and calibration of equipment. Since many military services have their own measuring equipment laboratories, strong efforts are being exerted to consolidate these laboratories. The general purpose for this effort is to prevent proliferation of calibration facilities among the military services. The Air Force is particularly active in this area.

A manual, developed and published by the Defense Supply Agency, prescribes uniform procedures among the military services and other DOD elements for retail interservice logistic support. This document was jointly developed with the military services and serves as a management tool for all participating DOD activities.

Area Coordination Groups (ACG's) established in the United States and overseas contribute to the successful operation of this program. Six of these ACG's are located in the United States. They are responsible for coordinating interservice support actions among the major commands of the military services and other DOD activities. Subgroups, consisting of military services representatives, comprise the hard working core of the program by exploring opportunities to en-

gage in interservice support. More than 30 of these subgroups are actively operating within the United States. Their effectiveness in the program is attested by the fact that more than 1,100 DOD activities are participants and have generated over 3,100 interservice support agreements.

Program advantages were cited in a survey conducted by the Defense Supply Agency to ascertain benefits to the users. Activities providing support indicated no increase in costs and the activities receiving support reported that the agreements greatly facilitated their operations.

Progress of the Defense Retail Interservice Logistic Support Program is measured through a reporting system which is operated at the Defense Logistics Services Center (DLSC), Battle Creek, Mich. Here feeder data, including dollar value of interservice support agreements and statistical data, furnished by activities providing support, are compiled on a periodic basis and published in a summarized report. The report is based on three basic factors: (1) Number of existing agreements; (2) number of participating activities; and (3) the total dollar value of reported support.

Over the past 4 fiscal years, the reported value of logistic support rose from \$229.9 million to \$591.6 million.

Efforts to insure continued progress of the program have been made through the establishment of a Joint Military Service/Agency Group at the Army, Navy, Air Force, Marine Corps, and Defense Supply Agency Headquarters level. Each representative serves as an Executive/Coordinating Agent and is the single point of contact for his service. The group functions as a policymaking, problem-clearing organization dealing exclusively with retail interservice support materials.

Publicity, education, and exchange of logistic intelligence are the tools whose continued use will perpetuate and maintain the Defense Retail Interservice Logistics Support Program as a beneficial asset to all participants. □

Air Force MSgt Bigsby and Navy technician Grenon unloading Navy electronic equipment for testing, measurement, and processing through an Air Force laboratory.



Curriculum content and organization, along with close faculty cooperation, promises to provide a well-integrated educational experience. Methodology would include readings, faculty and guest speaker lectures, group projects, military case studies, role playing exercises, simulation games, and group discussions. Extensive use would be made of computer-supported decision exercises, closed circuit television, and video training devices. Plans for the structure of such a course indicate the following principal subject areas.

- **Environmental Factors Affecting Military Management.** A few days would be devoted at the beginning of the course to provide comprehension of the influence of political, economic, social, and other factors on each other, on national power, and on military effectiveness. By examining these areas, the course would briefly explore the environment in which Army executives perform their functions.
- **Fundamentals of Decisionmaking.** This segment of the course concentrates on the conceptual structure of decision-making and prepares the participant to apply a sound approach in later studies and exercises which involve the allocation of resources of people, facilities, and information.
- **Army Internal Management Systems.** A large part of the course would examine the various decisionmaking methodologies used at different echelons and for different functional areas within the Army and DOD. Included would be management trends within the DOD; development of combat concepts, doctrine, and organization; the research and development of materiel Army planning and force development; management of individual and unit training; defense planning, programing and budgeting; financial management and accounting controls; information systems for planning and control; logistics management systems; personnel and manpower management systems; public information and community relations; and legal aspects of military operations.
- **Development of Executive Skills.** To provide an appreciation and understanding of skills needed to carry out objectives using human, materiel, and time resources most effectively, part of the course is designed to focus on exercises in establishing proper objectives, motivation, creativity, communication skills, engineering of agreement, and the development and use of subordinates.

- **Quantitative Analysis.** About a fourth of the course would be occupied with providing orientation in the use, potential, and limitations of quantitative techniques and in the development of capability to understand and interpret studies containing quantitative analysis. Some time would first be devoted in providing participants with the necessary minimum background in mathematics. Then would follow study in probability, statistics, model construction and analysis, simulation, war games, mathematical programing, production and inventory control, queueing, network analysis, basic elements of ADP, economic theory of costing, cost and effectiveness analyses, and systems analysis.
- **Exercises in Decisionmaking.** To integrate all the various executive skills with knowledge of environmental factors, Army management systems, and quantitative techniques, attention would be given to extensive military management games and case studies in military management.

In Summary

The U.S. Army Management School subscribes to the philosophy that an understanding of the management process is essential to successful command and direction over our resources and activities in the military services. We believe that the objectives established in this management process are attained most effectively and efficiently when the commander and manager creates among his people a climate of receptivity to the new and different, a climate which encourages innovation and a desire for change and improvement, and a climate which engenders a willingness to take risks with the privilege of failure. In this process, the acquisition of knowledge and skills is accompanied by continuous evaluation of the impact of attitude and behavior upon people and operations.

Specifically, our objectives are to develop knowledge and understanding of processes, systems, methods, concepts, and principles that have application in the management of Army operations; to improve personal competence in decisionmaking, problem-solving, communication, human relations, and other leadership skills; and to foster use of the knowledge and skills in dedicated performance. □

MILITARY PROBLEMS AND CASE STUDIES

- Airlift/Sealift
Strategic Deployment Studies
- M-39 20-mm Barrels (Statistical Analysis)
- REVAL Wheels (Force Planning Study)
- DYNAMO (Simulation of Land Combat)
- MBT-70 Political Constraints
- M-14 Rifle Acceptance Testing
- Helicopter Reconnaissance Tactics (Statistical Analysis)
- Variety and Movement in Army Training
- Optimal Allocation of Enlisted Men
- Advanced Aerial Fire Support System (AAFSS) Cost and Effectiveness Trade-Offs
- Battalion Slice Input/Output Model
- Navy Search and Rescue Boats
- Military Assistance to Hypothetical Country
- TORQUE (Research Planning Model)
- Strategic Systems Analysis (Anti-Ballistic Missile Systems)
- 750-lb Bombs vs. Missiles
- AAFSS Costing
- Small Arms Weapons Study
- Army Missile Battalion vs. Air Force Fighter Bomber Squadron
- Inequality and Insurgency (A Statistical Study)
- Lanchester Equations for Insurgency (Phase II)
- New Myths and Old Realities of Insurgency
- Analytical Model of Cuban Revolution
- Feasibility Study of Computer Simulation of Counter-insurgency
- Analysis of Shillelagh Missile Data
- Studies Management via Program Advisory Group (PAG)



These reviews were excerpted from "The Friday Review of Defense Literature"—a USAF publication whose editors are: Harry M. Zubkoff (managing); Patricia Brown (periodicals); Eva Brecher (books).

- Johnson, R. E., and J. W. McKie, "Competition in the Reprocurement Process," USAF Rand Project (RM-5657-PR), May 1968, 81 pp.

A savings of approximately 25 percent in procurement costs could be achieved by purchasing defense materials competitively. Unfortunately, competition for reprocurement is often not feasible because the firms which do the R. & D. on a project usually have "monopoly" power in the procurement stages due to their store of technical knowledge. Three barriers to competition for reprocurement exist: An economic barrier, due to high startup costs for defense production; a legal barrier, resulting from the developer's proprietary rights to technological data; and a technical barrier, because the Government is unable to provide new firms with sufficient technological information to complete with the initial producer.

The DOD has instituted a program of long-term contracts to overcome the economic barrier by spreading a firm's high entry costs over a period of years. To overcome the legal and technical barriers the DOD, in some cases, has established standard military specifications, although such specifications are usually expensive and may increase the maintenance costs to a point where they exceed the competitive benefits. The other approach is to obtain the developer's technical information in a "data package" which can be furnished to prospective suppliers when reprocurement is required. In 1963-64 the Government strengthened its requirements for obtaining technical data from the prime contractor and established unlimited rights to use such data for competitive reprocurement. Even then, however, not all projects could be transferred; on some occasions, the reprocurement data furnished by the Government were still incomplete, which led to production difficulties by the new supplier.

Commercial licensing procedures could avoid such problems by transferring not only engineering drawings and specifications, as the Government now does, but also detailed design information and direct technical assistance. If the Government would adopt the commercial procedures, it could achieve competitive reprocurement by providing, in the original R. & D.

contract, for eventual licensing of production technology. Other advantages would also accrue; the Government's role as mediator in the transfer process would be eliminated and its involvement with the contractors reduced; in addition, disputes over data rights would be minimized.

- Riordan, John J., Editor, "Zero Defects—The Quest for Quality", DOD Quality and Reliability Assurance Technical Report TR-9, U.S. Government Printing Office, August 15, 1968, \$2. 240 pp. (Available from Superintendent of Documents, Government Printing Office after Nov. 15, 1968.)

During the past 4 years, Zero Defects type programs have been adopted extensively by industry and DOD in-house activities. More than 4,000 Defense Contractors and their suppliers have instituted such motivational programs aimed at reducing personnel errors with resulting decreases in scrap and rework. Likewise, more than 100 industrial activities and operational commands of the Army, Navy, Air Force, and Defense Supply Agency have launched quality improvement programs through Zero Defects.

In November 1965, the DOD published a basic document, "A Guide to Zero Defects" to aid industry and DOD activities in establishing ZD programs. A more extensive publication has now been drafted by specialists from industry and the Department of Defense under the editorship of Mr. John J. Riordan, Director of Technical Data, Standardization Policy and Quality Assurance, OASD (I&L).

The following is a listing of the various subjects covered in the publication and the authors of the material:

Preface—Mr. John J. Riordan, Editor, Office of the Assistant Secretary of Defense (Installations and Logistics), Washington, D.C.

"Management and Human Performance"—Professor B. Vaill, University of California, Los Angeles, Calif.

"Economics of Defectiveness"—Dr. W. R. Pabst, Jr., Naval Ordnance Systems Command, Washington, D.C.

"Quality Through Functional Planning"—J. W. Young, North American-Rockwell, Los Angeles, Calif.

"Zero Defects Type Programs—Basic Concepts"—Captain E. R. Pettebone, USN, Naval Ammunition Depot, Crane, Ind.

"Technical Causes of Defectiveness"—F. McGinnis, Sperry Gyroscope Co., Long Island, N.Y.

"Assessment of Problems and Opportunities"—K. F. Wasmuth, Martin Co., Denver, Colo.

"Probing and Eliminating Causes of Defects"—A. S. Wall, Radio Corp. of America, Camden, N.J.

"Assessing ZD Program Effectiveness"—A. R. Tocco, TRW Co., Redondo Beach, Calif.

"Quality Education Program"—K. E. Joy, U.S. Army Missile Command, Huntsville, Ala.

"Detailed Guide for Program Planning"—J. Y. McClure, General Dynamics Corp., New York, N.Y.

"Sustaining the ZD Program"—M. V. Zimmer, the Boeing Co., Morton, Pa.

"Innovation and Research"—O. A. Cocca, U.S. Air Force Logistics Command, Dayton, Ohio

The Department of Defense publication will give visibility to ideas and techniques that are useful in establishing programs to prevent defectiveness. It is a compendium of points of view and experiences of specialists who have used the techniques and methods of industrial psychology, economics, and the various engineering and management disciplines to solve quality problems. It is expected that this publication will be useful in developing and improving Zero Defects type programs in both industry and Government.

• Baldwin, William L., "The Structure of the Defense Market, 1955-64," Durham: *Duke University Press*, 1967, \$8, 249 pp., reviewed by Dr. J. W. Annunziata, SAFAAR.

During the cold war decade of 1955-64, after the Korean disarmament and before the escalation in Vietnam, nearly two-thirds of the dollar value of prime defense contracts went to the 50 largest firms in the defense market. The number and rank of firms in the market was relatively stable. The behavior of the largest prime contractors and certain procedures and policies of the DOD, such as nonprice competition, prevented additional small businesses from getting in, while the highly specialized nature of defense work prevented some contractors from transferring to civilian production.

Defense demands for equipment under cold war conditions are steady, but they are usually responsive to technological advances. The demands are influenced not only by strategic and tactical factors, but also by management practices, political pressures, and Government ownership of plants and equipment.

There is little that the DOD can do through its procurement policies to remove the chief barriers to entry for more firms without harmful effects on the products and performance of the defense industry. Concentration, therefore, can be expected to continue and even intensify, since mergers between large prime contractors will enable them to extend their sales to more than one military service. New DOD policies, while they will undoubtedly have some impact on the structure of the market, do not seem likely to bring about any more change than did previous policies, such as the transition from manned bombers to missiles, the replacement of fixed-fee contracts by incentive awards, the procurement cutback of fiscal year 1960, and reductions in financial assistance and Government-owned facilities made available to contractors.

However, the DOD can help make its suppliers more price competitive and less exclusively reliant on defense contracts. Private firms are not inevitably more efficient than Government-operated facilities. Furthermore, Government operation of facilities supplying only Government needs, particularly in the area of national defense, does not violate the principle of free enterprise. The DOD's decision to make or buy should be based on careful and pragmatic comparison of costs, rather than on antipathy toward even economically justifiable Government activities. Stability of rank and dollar volume of prime contractors, coupled with higher than average rates of return on investment, indicate that the DOD should pay little attention to proposals for more generous treatment of contractors because of alleged high risk and instability in the defense market. The financial structures of the major contractors show that they are not very concerned about the risk posed by the prospect of disarmament. However, in the interest of economic preparation for the eventuality of disarmament, the DOD should encourage defense contractors to place greater emphasis on entering the civilian production markets.

• McNamara, Robert, "The Essence of Security," New York: Harper & Row, 1968, \$4.95, 176 pp. Following is an extract from a review by Eva Brecher, SAFAAR.

Economic, social, and political progress is necessary within the United States; the Department of Defense can make contributions in this area while forwarding its primary role of maintaining combat readiness. The Department has instituted three programs designed to contribute toward the solution of social problems. The Open Housing program is designed to insure that all military personnel will be able to obtain off-base housing when necessary. In pursuing this program, the Department is helping break down the lines of segregation. Project 100,000 is designed for those who would normally be rejected for military service because of educational deficiencies and other problems related to poverty. By providing education and training in an atmosphere of high motivation and morale, the Depart-

ment has transformed these men into competent military personnel with useful skills which can later be used in civilian life. Along the same lines, Project Transition provides training for those about to leave the military who need different or improved skills to make an effective transition to civilian life.

Within the Department, civilian control, active imaginative leadership, and modern managerial tools are necessary. Management reforms have introduced more efficient methods and the planning of the four services has been coordinated. The Planning-Programming-Budgeting System provides the mechanism whereby budgets, weapons programs, military strategy, and foreign policy objectives can be coordinated; produces the annual Five-Year Defense Program which is the basis for the annual proposal to Congress; permits management to concentrate on the overall tasks of national security rather than on those of individual services; and provides a coordinated plan for the entire defense establishment which is projected far enough into the future to insure that all programs are physically and financially feasible. Thus the Department applies strict standards of effectiveness and efficiency in its spending while insuring that all that is necessary in the interests of national defense is accomplished.

- Fisher, Irving N., "A Reappraisal of Incentive Contracting Experience," USAF Rand Project (RM-5800-PR), July 1968, 48 pp.

Incentive contracts have made both the Government and industry more cost conscious, but there is no conclusive evidence that they have succeeded in reducing the costs of military procurement. Until now it was generally assumed that they were effective in controlling and reducing costs, simply because cost underruns almost invariably occurred under incentive contracts. It seems more likely, however, that such underruns did not result from reductions in cost through efficient operations, but rather from the fact that the target costs were initially set too high.

The reasoning behind the increasing use of incentive contracts is that they induce the contractors to reduce costs by providing financial rewards for all cost saving. Thus, as costs are reduced below a target, the profits are increased. However, the validity of a reduction in costs depends on the validity of the initial target cost. An analysis of 1,007 Air Force contracts, representing about \$15.7 billion in weapon system procurement from 1959 through 1966, indicates that, although cost underruns are more common under incentive contracts, they do not necessarily indicate more efficient operations or actual cost savings.

Accordingly, future cost savings will depend on developing better ways of estimating a realistic target cost,

rather than on providing increasingly elaborate incentives in the contract.

(This summary was adapted from the Rand Research Brief.)

- "Aerospace Technology: Creating Social Progress," Washington: *Aerospace Industries, Inc.*, July 1968, 24 pp.

The techniques of systems analysis and the managerial expertise, which have been developed and refined mainly by the aerospace industries, can be applied to a great many problems confronting the country. A broad range of national problems, including urban renewal, surface and air transportation systems, development of new materials, water and air purification, application of technological innovations to medicine, weather modification and control, and a host of others, are susceptible to the systems approach. Of special importance today are the benefits and improvements in education and crime control which could be derived from the analysis techniques currently available.

A modest effort is already underway in transferring aerospace technology to the fields of social progress, but much more can be done. Karl G. Harr, Jr., President of Aerospace Industries Inc., notes that the "mechanisms of technology transfer" are just beginning to be understood and applied, and that the prospects of progress in the next decade are almost unlimited.

- "Integrated Logistics Support Planning Guide for DoD Systems and Equipment," Office of the Assistant Secretary of Defense for Installations and Logistics, Washington, D.C. \$3.75 from Superintendent of Documents, Washington, D.C. 20402.

This guide relates logistics support to systems design.

It represents a major step in defining activities which must be performed at various phases of the acquisition process if there is to be a significant opportunity to manage logistics support. It expresses the basic philosophy that more effective logistics support must be provided for in the design of the weapons systems of the DoD. The Hon. Thomas D. Morris, Assistant Secretary of Defense (I&L) and Dr. Finn J. Larsen, Deputy Director, Defense Research and Engineering, state in the Foreword that this document represents "a key step towards an emerging improved Systems Engineering process for Defense systems and equipment, which has as its goal the achievement of proper balance between operational, economic, and logistics factors." The Guide, initiated by the Assistant Secretary of Defense (I&L), may be considered a product of joint effort of the Office of the Secretary of Defense, Logistics Management Institute, the Military Services, and many companies participating in committees of the various industry associations of Defense.

(PRESIDENT, continued from p. 1)

the propaganda of the time, and the criticism of superiors and inferiors wherever they might be, has never deterred the loyal soldiers in uniform or the civilians who supported them from carrying out their orders and doing their duty for the land that they care so much about.

One of the most inspiring statements I have heard in recent years was when, in a somewhat questioning period, a distinguished man from private life who was approaching his first public service at retirement age of 65 was asked, "Why would you take this job?"

And he spontaneously said, "Because I love America." And he added a few other things which I will not do.

Why have you done this job? Not just for the paycheck. Not just for the satisfaction of working with more than 4 million other human beings, but the reason that you have excelled and the reason that you have written a record of which you and your descendants can always be proud, is because, I believe, you love America.

So, this has proven to me as your President what I have always believed throughout my lifetime of public service, that one of the greatest strengths this Nation has is the caliber and the character of the men and women in our defense establishment—both in and out of uniform. You are a very special people to me. You have been with me in sunshine and sorrow and you have given me strength when I needed it most.

As I meet with you, perhaps for the last time, I

want each and every one of you to know that some may have fallen by the wayside and some may have changed their minds, but the Department of Defense, as exemplified by this great record you have written here, has never failed me—and what is more important—never failed their country.

So, as your President—and as your Commander in Chief—I have proudly come here this morning to salute you.

I want to conclude this visit by saying thank you to the people of the Defense Department who make possible the President's communications, who contribute a great deal to the good food that he eats, who preserve his health wherever he is, and who finally transport him anywhere, anytime, on time.

I know that no President has ever been served so efficiently. I have flown around the world in 59 hours. I have met with 15 heads of state and I have not been 1 minute late. How the Air Force, the Army, the Navy, and Marines—all of whom played their part—could have done that so efficiently, so thoroughly coordinated, I have never understood.

From the time I wake up in the morning, when one of the mess boys may present me my breakfast, until the time my plane touches down in some distant place, I have never felt so secure and I know I have never been in more competent hands.

So, sometime I am going to have my own little ceremony for the communications, the health, the food and the transport people, because they are a great outfit.

Thank you. □

About People Here and There

FORMER OSD COST REDUCTION CHIEF RECEIVES ZUCKERT MANAGEMENT AWARD

Major General Joseph R. DeLuca, center, Chief of Staff, Supply Headquarters Air Force Logistics Command, received the 1968 Zuckert Management Award from former Air Force Secretary Eugene M. Zuckert in Pentagon Ceremonies on October 28, 1968 as Zuckert's successor, Air Force Secretary Harold Brown looks on. General DeLuca was cited for managing a supply program that resulted in savings to the Air Force of nearly \$42 million for the year. (General DeLuca headed the Cost Reduction Program Office in the Office of the Secretary of Defense from September 1963 to June 1964. He received the Joint Service Commendation Medal in June 1964 for his expertness in guiding both the in-house Cost Reduction Program and the Defense Contractor Cost Reduction Program through their formative stages.)



UNSUNG HEROES

At a ceremony in the Fort Myer Officers' Club, Arlington, Virginia, on November 6, Assistant Secretary of Defense Thomas D. Morris presented Certificates of Appreciation to 16 Staff members of the Office of the Secretary of Defense for their leadership in the Cost Reduction Program. The 16 recipients serve as chairmen of subgroups administering the various areas of the Cost Reduction Program.

In remarks prefacing the presentation, Deputy Assistant Secretary of Defense George Fouch described these subgroup chairmen as "unsung heroes" because of their vital though unpublicized behind-the-scenes role. Mr. Fouch said: "The Program, in its seven years existence, has brought tremendous real benefits as well as recognition and honors to the Department of Defense. More than any other single factor, it has helped bring both the look and the reality of efficiency to the management of Defense logistics. As a result of this Program, literally thousands of Defense employees have been recognized for contributing ideas that have improved management—recognized through ceremonies, certificates of merit, publicity and other media. Yet, in all this fanfare of appreciation, there has been an oversight—and a very grievous one. There has been no general testimonial to the extraordinary efforts of the very few people who shaped and managed this Program. These are the people who provide the Program guidance and administer the cost reduction system. They are the people who really make this Program tick—the cost reduction monitors in field activities, the staffs in Departmental cost reduction offices, the experts who serve on OSD cost reduction subgroups, and—finally—the executives who head up these subgroups. They are the unsung heroes of a pioneering program that has been adopted in every department and major agency of our Government. We intend to make a small beginning today in singing their praises."

Harrell Altizer, Director for the Cost Reduction and Management Improvement Program, described each recipient's particular management role in the Program as Secretary Morris presented the Certificates. The recipients were: LTC John E. Reid and Messrs. R. J. Dintaman, V. F. Mayolo, R. H. Kempter, W. C. Tayloe, H. Francis, S. McClung, H. F. Reem, P. Hyman, R. Tramountano, R. Lytle, H. Campbell, P. L. Donohue, J. Picco, H. R. Pellegrino and S. Harman. (The photo shows William Point, Director of Real Property Management (at right) accepting from Secretary Morris the certificate awarded Sam McClung who was unable to attend the ceremony.)

COST REDUCTION FILM WINS "OSCAR"

Jim McCannell, Associate Editor of the Defense Management Journal, returned recently from Chicago with an "Oscar" from the Industrial Management So-



ciety for OSD's cost reduction film "So What's New In Ideas", a 16½ minute Kodacolor production prosaically labeled OSD 2-67 in film libraries.

The "Oscar" is more formally known as the Ralph H. Landes Award of the Industrial Management Society. The Society sponsors a film competition annually to recognize outstanding motion pictures that deal with "the human psychology of management, the development of greater productivity, and the stimulation of cost reduction." This 17 year old film competition was inaugurated by its namesake Ralph H. Landes, a retired executive of the Western Electric Company and a past president of the Society. Mr. Landes has served as General Chairman of the annual IMS Clinics for Industrial Engineering and Management for the past 18 years.

Over 1600 films were entered in this year's competition. OSD's "So What's New—In Ideas" placed second in the motivational category. The photo shows Jim McCannell (right) receiving the award from Mr. Landes.

(The 2-foot high trophy now resides on a bookcase in the Office of the Director for Cost Reduction and Management Improvement Programs. Someone has placed a small placard above it. The placard reads: "So who was number one?")



COST REDUCTION— FISCAL YEAR 1968



SECRETARY CLIFFORD'S STATEMENT

Secretary of Defense Clark M. Clifford issued the following statement on October 3, 1968:

"I have sent to the President today my first report as Secretary of Defense on our continuing efforts to achieve economies and increased efficiency.

"I know of no more demanding job for Federal employees at all levels than that of attempting to achieve genuine cost savings through better management methods. This is not a glamorous job; it is a matter of daily hard work and dedication by thousands of individuals making an extra effort to do their jobs more economically.

"I have reported to the President that last year—fiscal year 1968—over 27,000 verified management improvement actions, resulting in cost reductions of \$1.2 billion, were initiated by at least that many different Defense personnel. These savings were made as part of our regular operations outside of Vietnam.

"I am especially impressed with the fact that General Westmoreland, on his own initiative, organized a separate cost-savings program within Vietnam. As a result of his leadership and that of General Abrams in the 12 months of fiscal year 1968, our forces in Vietnam took cost reduction actions that will save over \$500 million. This is a remarkable achievement in the midst of a major conflict.

"To put these \$1.7 billion total savings in perspective, they are equal to one dollar saved every day in the year by everyone of our 4½ million civilian and military employees.

"Since many of these actions have a carry-forward impact, they are assisting us to live within the austere budget with which we are faced this year.

"I am designating October 7 through October 11 as Defense Cost Reduction Week. On Tuesday, October 8, we will honor a group of our employees for their contributions. We will display over 100 illustrations of the types of actions which our employees have taken to hold down the costs of Defense operations.

"I think it important that the American public have an appreciation of the magnificent efforts of our employees to reduce Defense costs. As I commented to the President: '... We must never relax our vigil to eliminate waste, and we must never slacken our search for more economical practices.' □

THE SECRETARY OF DEFENSE
WASHINGTON

October 3, 1968

MEMORANDUM FOR THE PRESIDENT

SUBJECT: Economical Management of the Department of Defense
Immediately after assuming my responsibilities as Secretary of Defense on March 1, 1968, I reviewed the programs of the Department which are aimed at achieving greater economy in our operations. I took this priority action because I am firmly convinced that we must never relax our vigil to eliminate waste, and we must never slacken our search for more economical practices.

I was immensely impressed with the record of accomplishment which I found. This record shows that in the preceding 6 years, the military departments had produced audited savings of over \$15 billion. The Army, Navy, Air Force, Marine Corps, and Defense agencies had produced these savings—not at the expense of combat effectiveness—but by: (1) More efficiency in determining requirements for materiel; (2) more economic methods of contracting for supplies and equipment; and (3) lower costs of operating our bases and support activities.

I issued instructions that these excellent efforts were to be fully maintained—and that more new ideas for management improvement were to be sought vigorously.

We have just summarized the results of our efforts to reduce costs and improve management in the 12 months of fiscal year 1968. I am pleased to report that the military departments have not only continued the outstanding record of the past, but have added some new accomplishments, as follows:

- First, under the regular Cost Reduction Program, carried on primarily by our logistic support activities, new savings achieved in fiscal year 1968 exceeded \$1.2 billion. This is 17 percent above the goal which these activities had established for the year.
- When added to the accomplishments of the preceding 6 years, this means that over \$16 billion has been saved since 1962 as the result of new and intensified management actions throughout the Department of Defense.
- In addition, there has been a dramatic new contribution to lower costs in the past year. General Westmoreland and his successor in Vietnam, General Abrams, inaugurated and pushed a program known as "MACONOMY," designed to attain the most effective and efficient use of resources. This special program produced savings in excess of \$500 million in fiscal year 1968—a remarkable achievement in the midst of a major combat effort.

Needless to say, the actions of the past year will be reflected in our budget estimates for fiscal year 1970, and will help us live within the budget limits required by the Revenue and Expenditure Control Act of 1968.

It is with pride that I transmit to you the attached report which outlines some of the individual actions that have resulted in the above accomplishments.

Robert L. Seigfried

Report to the President on COST REDUCTION AND MANAGEMENT IMPROVEMENT *in the Defense Department, Fiscal Year 1968*

Secretary of Defense
October 3, 1968

INTRODUCTION

Shortly after I became Secretary of Defense, I determined that the formal DOD Cost Reduction Program should continue to receive high priority attention. During its first 6 years, the program had saved over \$15 billion and it had proved its value as an effective tool of management.

I also determined that the program should continue to operate under very tight ground rules. I will insist that every savings reported be validated by independent audit. Only those savings resulting from better management—getting the required job done at less cost—will qualify as true cost reductions.

The principal objectives of the Cost Reduction Program will continue to be:

- (1) Buying only what we need.
- (2) Buying at the lowest sound price.
- (3) Reducing operating costs.

The results achieved in respect to each of the objectives in Fiscal Year 1968 were as follows:

[Dollars in millions]

	Savings goal fiscal year 1968	Savings realized fiscal year 1968	Estimated value of savings 1968-70
Buying only what we need.....	\$645	\$693	\$1, 245
Buying at the lowest sound price.....	93	97	195
Reducing operating costs.....	304	429	1, 194
Total.....	\$1, 042	\$1, 219	\$2, 634

These Fiscal Year 1968 savings are the result of more than 27,000 separate management actions, each of which has been reviewed and validated by independent audit. Examples of these actions are discussed in the remainder of this report.

PART I—BUYING ONLY WHAT WE NEED

A. By More Precise Requirements Calculations

Supply systems managers must see that our operating forces receive everything they need, on time—but no more than they need. This is an awesome task when one realizes that it takes 4 million different items to supply our men and to keep our planes, ships, vehicles, and equipments of all kinds in ready-to-use condition.

Our supply managers have performed their job with great skill during the past fiscal year, under the pressures of a major conflict. For example, ammunition and helicopter production has surged to meet unprecedented requirements levels. The operationally ready rates of major items of equipment in Vietnam were maintained at standards equal or superior to those elsewhere in the world. This was achieved by daily review of critical parts required and immediate airlift from the United States of those not on hand in Vietnam.

This rapid supply responsiveness has been achieved while minimizing our investment in supply inventories. The value of major weapons and military equipment in use has increased by 45 percent from \$68 billion to about \$99 billion since 1961, but the investment in supply inventories has remained at very nearly the same level as in 1961. This is due to much closer management attention, and to studies which are making it possible to predict requirements more accurately.

Here are some typical economies produced by these studies:

- The Air Force cut in half its procurement requirement for aircraft fire-control checkout equipment when tests and new analyses showed that the new equipment would perform checks much quicker than the old—thus saving \$1,625,000 in Fiscal Year 1968.
- The Defense Supply Agency canceled a procurement requirement for repair parts for Diesel engine cylinders when an analysis of demand rates showed it was economically advantageous to disassemble kits of parts and issue the contents as separate items—thus saving \$283,690 in Fiscal Year 1968.

- The Marine Corps reduced requirements for rain-suit repair kits by substituting 850 company-size kits (cost: \$23 each) for the 100,000 individual kits (cost: \$1.60 each) consumed each year—thus saving \$140,450 in fiscal year 1968.

Dozens of actions such as the above produced cumulative savings of \$305 million in fiscal year 1968, and will save \$547 million in the 3-year period fiscal years 1968–70.

B. By Innovative Use of Excess Inventories

The Department of Defense has \$3 billion less long supply and excess today than it had in fiscal year 1961. Much of this reduction is attributable to the reutilization of these items in meeting current requirements. However, mere identification of a long supply or excess item to meet a current need does not count as a saving in the Cost Reduction Program. The only time a reutilization action counts in the Cost Reduction Program is when some ingenious individual adapts the excess item to a use for which it was not intended when purchased, or finds a way to modify the excess item to meet a current requirement. Such imaginative applications of excess and long supply produced savings of \$88 million in fiscal year 1968 and will produce savings of \$102 million for the 3-year period fiscal years 1968–70. Some examples of this kind of ingenuity follow:

- The Army eliminated the need to procure new engines for target missiles by modifying the horsepower capacity of excess engines—thus saving \$248,437 in fiscal year 1968.
- The Navy was able to meet requirements for 318,000 containers for the 5"/54 round by modifying the dimensions of excess cartridge containers designed for the 5"/38 round—thus saving \$1,702,200 in Fiscal Year 1968.
- The Air Force placed shaped inserts inside 4,622 obsolete aircraft camera cases to make them fit cameras of various sizes—thus saving \$748,995 in fiscal year 1968.

C. By Eliminating "Goldplating"

Since fiscal year 1962 this Department has been pursuing an organized program to simplify the design and manufacture of products that it needs. This systematic effort is called Value Engineering. It consists of analyzing the functions of Defense weapons systems and equipments for the purpose of achieving required results at the lowest total cost, consistent with requirements for performance, reliability, quality, and maintainability.

Many value engineering changes also improve item performance, or open up new sources of supply, in addition to saving money through the simplified design. For example:

- The Army simplified the design of circuit breakers for mobile power units used in Southeast Asia—thus saving \$908,825 in fiscal year 1968 and making it possible for several bidders to compete with the previous sole-source producer.
- The Navy eliminated 3 years' replacement requirements for the filter mechanism in the guidance system of a major weapons system by re-engineering it to increase its reliability—thus saving \$5,127,000 in the period fiscal years 1968–70.
- The Air Force designed a simpler fitting for anchoring cargo tiedown straps to the floor on C-141 aircraft—thus saving \$372,177 in the period fiscal years 1968–70 and opening up new sources of supply to help meet emergency Southeast Asia requirements.

Value engineering actions taken in fiscal year 1968 yielded savings of \$290 million in that year and \$579 million for the 3 years, fiscal years 1968–70. Industry made a significant contribution by proposing many of these changes.

PART II—BUYING AT THE LOWEST SOUND PRICE

The Department of Defense employs 65,000 personnel who are concerned with the many facets of procurement—i.e., contracting, contract administration and quality control. Last year we consummated 11.4 million purchase transactions. Our purchases aggregated \$43.8 billion, and over 24,000 prime contractors received awards of \$10,000 or more.

Purchasing offices are expected to buy at the lowest sound price. Three procurement practices which help them do that are specifically encouraged by the Cost Reduction Program. Each of these practices saves considerable money.

A. Competition

One desirable practice is to shift sole-source procurements to a price competitive basis. Our studies show that competition usually reduces the price of a previous sole-source item by 25 percent—and frequently even more. Since 1961, conversions from non-competitive to competitive procurement have saved the Defense Department over \$2 billion. That is a significant achievement—but it should not lull us into complacency. I have re-emphasized that I expect no

relaxation in our efforts to employ competition to the maximum extent possible in the award of Defense contracts.

Our fiscal year 1968 goal was to convert enough previous sole-source type procurements into competitive procurements so as to save at least \$43 million. We exceeded that goal by more than 50 percent, and achieved savings of \$66 million. The cost reduction effect of these conversions for the 3-year period fiscal years 1968-70 will be \$118 million.

Each purchase that contributed to these savings might easily have followed its historical sole-source pattern. However, as part of the Cost Reduction Program, our procurement people took positive action to obtain competition—by seeking out additional sources; by breaking out parts and components from complex equipment for separate competitive procurement; by obtaining data sufficient to prepare a purchase specification suitable for competitive bids; and in other ways.

Here are examples of how competition lowered prices substantially in fiscal year 1968:

	Price per unit		Per- cent reduc- tion	Savings fiscal year 1968
	Noncom- petitive	Com- petitive		
Clamp for pneu- matic starter.....	\$141.00	\$40.12	72	\$49,532
Frequency stand- ard module.....	205.31	156.50	24	82,682
Support for jet engine nozzle vaness.....	1,070.90	391.50	64	82,107
Spare parts for helicopter armament subsystem.....	8,098.51	5,083.60	37	733,076
Electron tube.....	54.00	37.25	31	13,066
Gyro assembly.....	17,151.96	7,950.00	54	36,708

B. Multiyear Procurement

In addition to competition, the Cost Reduction Program encourages buying 2 or more years requirements for an item under a single contract, wherever this is feasible. This practice is called multiyear procurement and offers the advantages of—

- eliminating repetitive start-up costs
- attracting more competition for the larger quantity
- enabling greater “learning curve” economies over the longer production runs

The following examples show how conversion from single-year purchasing to multiyear purchasing resulted in lower prices to the Government in fiscal year 1968:

	Unit price		Per- cent reduc- tion	Fiscal year 1968 savings on recent procure- ment
	Single year	Multiyear		
Generator set....	\$722.50	\$685.70	5	\$95,128
Radio antenna....	104.68	88.95	15	206,377
Hook point for arresting gear..	661.98	565.87	15	94,503
Practice bomb....	4,145.00	3,575.00	14	216,206
Starlight scope....	646.50	444.00	32	618,637

Multiyear procurement actions taken in fiscal year 1968 saved \$20 million that year and will save \$57 million in the 3-year period fiscal years 1968-70.

C. Direct Purchase Breakout

The Cost Reduction Program encourages purchasing offices to avoid middleman markups on parts and components by buying the item directly from the manufacturer instead of having the weapons system prime contractor subcontract for it.

Purchases switched from subcontract to direct Government purchase during fiscal year 1968 saved \$11 million in that year—and will save \$20 million in fiscal years 1968-70. Some examples follow:

	Unit price		Percent reduc- tion	Savings fiscal year 1968
	Prime contractor	Vendor		
Turbocharger....	\$858.69	\$669.50	22	\$129,912
Personnel air rescue system..	378.00	197.35	48	61,239
Constant speed power trans- mission.....	12,615.00	7,500.00	40	1,780,020
Electron tube....	58.09	43.00	25	135,810
Aircraft starter generator.....	1,000.00	742.00	25	54,414

The improvements resulting from increased competition, multiyear procurement, and direct purchase breakout produced lowered procurement costs by \$97 million in fiscal year 1968, and by an estimated \$195 million for the 3 years, fiscal years 1968-70.

PART III—REDUCING OPERATING COSTS

Part III of the Cost Reduction Program is aimed at increasing the efficiency of a broad range of logistic support operations—including base operations, trans-

portation, communications, maintenance management, and general administration.

In these areas audited savings realized from new or intensified management actions in fiscal year 1968 totaled \$429 million. During the 3-year period 1968–70, savings from these actions are expected to total about \$1.2 billion.

The source of these savings in fiscal year 1968 was as follows:

<i>New economies in:</i>	<i>Savings in fiscal year 1968 (in millions)</i>
Transportation and packaging-----	\$127
Communications -----	14
Equipment maintenance-----	97
Real property maintenance-----	26
Computer systems usage-----	13
General management improvements, base reductions and closures-----	152
Total-----	\$429

Thousands of actions make up the above savings, ranging from those with a value of only a few hundred dollars, to multimillion dollar results. Illustrative of these are:

- The Army Air Defense Center at Fort Bliss, Tex., increased the efficiency of its motor pool operation—thus saving \$295,000 in fiscal year 1968.
- The Navy use of trailer-type vans for provisions destined for Subic Bay, Philippines, speeded up ship loading and off-loading by 30 percent—thus reducing supply pipeline requirements by \$1.6 million in fiscal year 1968.
- The Air Force developed a way to repair the worn turbine shafts of jet engines—thus eliminating replacement costs of \$2.4 million in fiscal year 1968.
- The Marine Corps Supply Center, Albany, Ga., initiated a large number of management improvement actions in fiscal year 1968, producing cost reductions totaling \$726,000. This activity exceeded its cost reduction goal by almost 2 to 1.

The military services continued our 6-year program of consolidating, reducing or terminating unnecessary activities wherever feasible. In total, over 100 such actions were taken in fiscal year 1968. When completed, these actions will produce annual savings in excess of \$80 million.

Where career employees are dislocated by terminating unnecessary operations, they are offered another job opportunity, and their moving expenses are paid if the new job requires a move to another location. Furthermore, we have continued our program of economic adjustment assistance to communities affected by base closure actions. The Defense Department's Office of Economic Adjustment, during fiscal year 1968, worked with 22 communities in 18 states to help offset economic impacts caused by the closing or reducing military activities.

PART IV—COST REDUCTION IN VIETNAM: PROJECT “MACONOMY”

The regular Cost Reduction Program described above—with its formal requirement for predetermined goals, and detailed audit of each management improvement action—had not been extended to Vietnam.

However, with the logistics buildup nearing completion in calendar year 1967, General Westmoreland inaugurated a number of programs to conserve the use of both manpower and materiel resources. These programs have been continued by his successor, General Abrams. One of these is MACV's own Cost Reduction Program which has been given the code name “MACONOMY”.

By June 30, 1968, Project “MACONOMY” had resulted in documented savings of \$512 million, with every military component—Army, Navy, Air Force, and Marine Corps—participating.

General Abrams' report describes 130 cost reduction actions for the year ended June 30, 1968. Several of the largest of these actions are:

- Air Force redistributed \$106 million in supplies and equipment found to be excess at eight Southeast Asia bases where they were then located. These stocks have been returned to supply channels in order to avoid new procurement in this amount.
- In a similar action, the Army's 2d Logistical Command reclaimed over \$57 million in serviceable excess materiel which, in previous conflicts, was eventually sold as scrap or destroyed.
- The supply pipeline (order and shipping time factor) from the United States to Vietnam has been reduced by 30 days. This has permitted a reduction in inventories to support Army operations by \$71 million.
- More detailed analyses of soil conditions and performance requirements made it possible to save \$50 million in the construction of 62 airfields.
- Among the remaining actions reported were savings of over 7,400 manpower spaces.

PART V—OTHER MANAGEMENT IMPROVEMENT ACTIVITIES

The Cost Reduction Program measures our progress in saving money. We have found that special emphasis must also be given to improving logistics systems and operations in other ways that cannot be immediately measured in terms of dollar savings. For this reason, the Department of Defense in fiscal year 1968 inaugurated a Management Improvement Program which currently covers 24 additional logistics areas. The program is designed to cause major improvements in these areas, based on the findings of congressional committees, GAO, and our own continuous audit and survey programs. Major progress has been made in the past 12 months.

For example:

- The number of nonessential supply items purged from our depots during the year indicates how well our inventories are being streamlined. More than 360,000 items were eliminated from the DOD catalog last year.
- On-time availability of stocks from depots to fill user requisitions is another key measure of logistics efficiency. The Defense Supply Agency—which supplies half of the items used by all Services—is maintaining a 90 percent stock availability week after week.
- We are constantly striving to increase the operational readiness of our aircraft and other weapons systems. To do this we are stressing factors such as increased flying hours between overhauls, and reduced maintenance cost per flying hour. Outstanding records of operational readiness are being achieved even under the tempo of Vietnam operations.

The Management Improvement Program provides the impetus for positive action by—

- setting performance goals to be met by those responsible for management improvement
- providing current, comprehensive, and accurate feedback on trends,
- requiring searching analysis of shortfalls in meeting goals

In combination, the Cost Reduction and Management Improvement Programs are subjecting our logistics systems to the strongest pressures for improvement they have ever had.

CONCLUSION

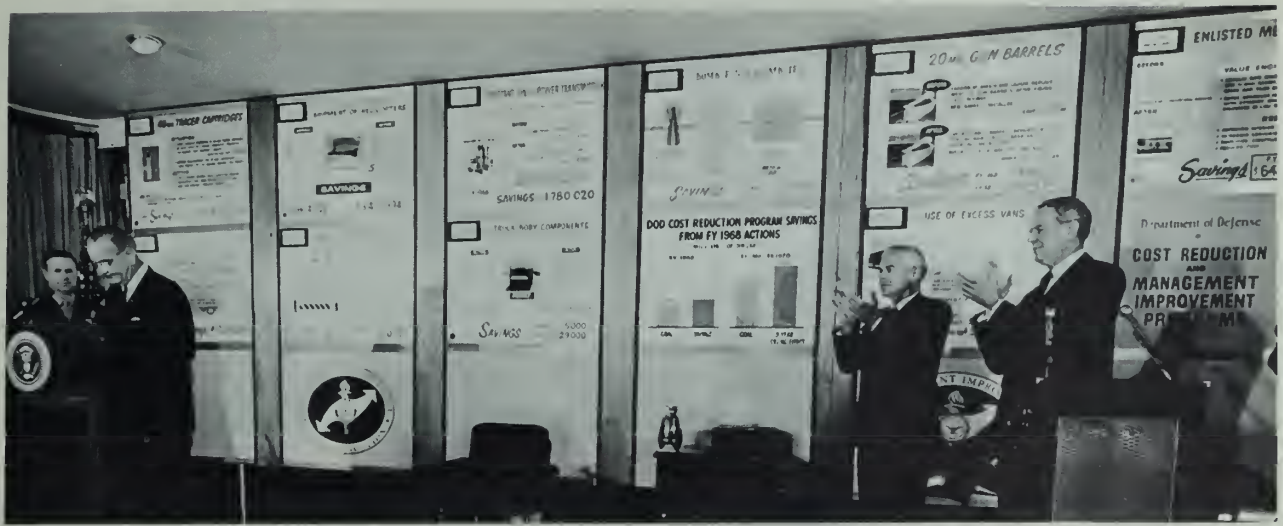
Before he departed the Office of the Secretary of Defense, Secretary McNamara said, "Annual savings in the program should continue to be substantial. I foresee no letup in emphasis on cost reduction—from the President on down. If anything, the fiscal needs of Vietnam and this Nation's civilian programs are intensifying the pressures to find new and better ways to stretch our resources."

Results in fiscal year 1968 bear out this prediction. They demonstrate that this Department's 4½ million people—military and civilian—are sustaining their vigorous 7-year drive for more economic, more efficient, and more effective management.

I am determined that the Cost Reduction and Management Improvement Programs will continue to receive priority attention at all echelons throughout the Department of Defense. Your personal participation in activities related to the Cost Reduction Program is deeply appreciated. This participation is a manifestation to all our people of the great urgency of our efforts to achieve maximum efficiency and economy. □



Flying Gas Station—Rubber bladders containing fuel are rapidly unloaded from an Air Force C-130 transport at the dirt landing field at Tay Ninh, South Vietnam. Transport of fuel in bladders of this kind makes it possible for the Air Force to rapidly resupply Army ground units without wasting valuable time unloading barrels.



AWARDS AND HONORS

PRESIDENT LYNDON B. JOHNSON presented citations, at a ceremony on the Pentagon concourse at 11:30 a.m., October 8, to 10 individuals and to representatives of six organizations that contributed significantly to the Department of Defense Cost Reduction and Management Improvement Program during fiscal year 1968.

President Johnson made the presentations on a stage at the south end of the concourse. Secretary of Defense Clark M. Clifford was host to the President, with the assistance of Deputy Secretary of Defense Paul H. Nitze and Joint Chiefs of Staff Chairman Gen. Earle G. Wheeler.

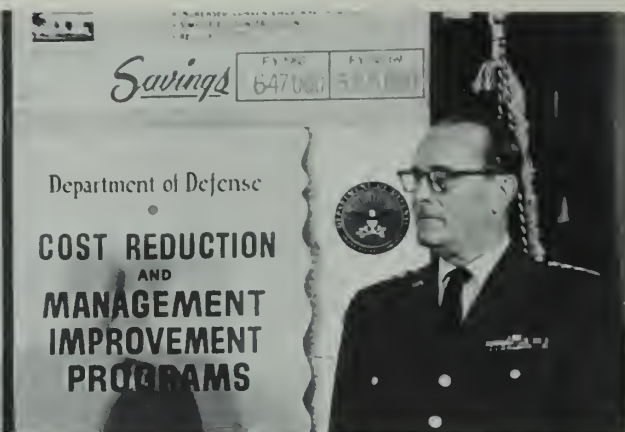
The Pentagon ceremony was attended by the Secretaries of the Army, Navy and Air Force, members of the Joint Chiefs of Staffs, and other high ranking

military and civilian officials of the Department of Defense. This ceremony was the highlight of Cost Reduction Week observed October 7 through 11 to honor the thousands of Defense employees who contributed to cost reduction actions since inception of the program in 1962.

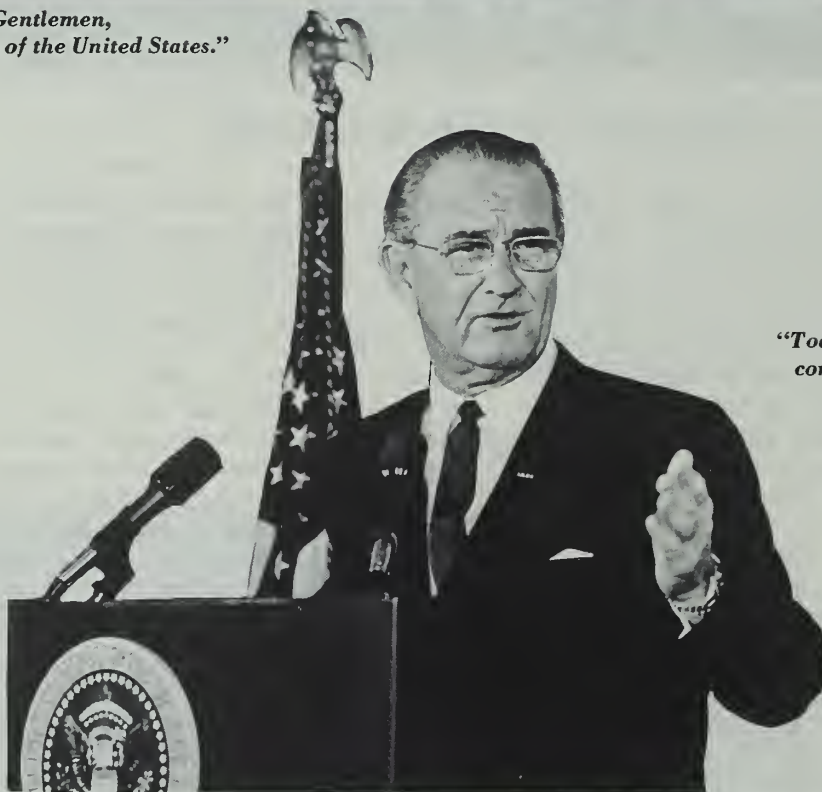
Secretary Clifford reported to President Johnson on October 3, 1968, that more than 27,000 verified management improvement actions resulted in cost reductions of more than \$1.2 billion under the regular program in fiscal year 1968, and that additional savings of more than \$500 million were achieved in fiscal year 1968 under a separate program, Project MACONOMY in Vietnam, initiated by Gen. W. C. Westmoreland and carried forward by Gen. Creighton W. Abrams. □



President Lyndon B. Johnson presents citations to S. Sgt. Dolphus Milton, U.S. Marine Corps (left) and Mrs. Barbara M. Grant for contributions to the Department of Defense Cost Reduction and Management Improvement Program for fiscal year 1968.



*"Ladies and Gentlemen,
the President of the United States."*



*"Today, the people from business
corporations come here to study
your managerial methods."*



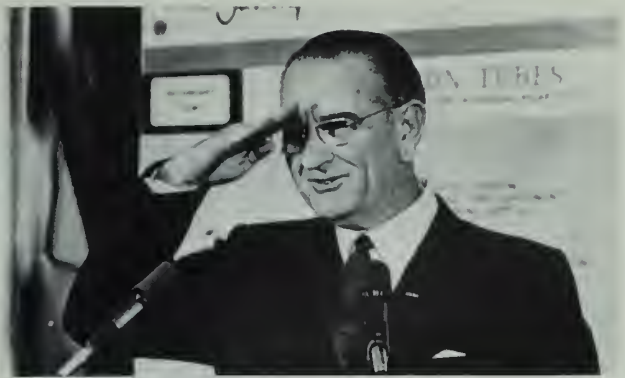
The awardees listened.



So did the "brass".



"Mr. President, your personal participation in activities related to the Cost Reduction Program is deeply appreciated."



"... as your President . . . and as your Commander in Chief . . . I have proudly come here this morning to salute you."

AT PRE-CEREMONY BRIEFINGS



In photo at left, Assistant Secretary of Defense Thomas D. Morris (center) welcomes each awardee on arrival at the Pentagon.



In photo at right, Deputy Assistant Secretary of Defense George E. Fouch, chats with awardees and their families.



Enroute to Secretary Clifford's office to attend a Cost Reduction Program briefing while awaiting arrival of the President are: (left to right, foreground) Adm. Thomas F. Moorer, Chief of Naval Operations; Gen. John D. Ryan, Vice Chief of Staff, U.S. Air Force; Gen. Bruce Palmer, Vice Chief of Staff, U.S. Army. In background, left to right, are: John Macy, Chairman of the Civil Service Commission, and Elmer Staats, Comptroller General of the United States.

Individual Recipients of

Lt. Col. Dennis M. Boyle
U.S. Army Aeronautical
Depot Maintenance Center
Corpus Christi, Tex.



AND
MSGT William A. Lilley
U.S. Army Aeronautical
Depot Maintenance Center
Corpus Christi, Tex.



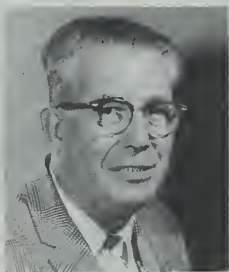
Combat veterans Lt. Col. Dennis M. Boyle and M.Sgt. William A. Lilley found a way to pack helicopters more compactly for air shipment to Southeast Asia while working together at the Army Aeronautical Depot Maintenance Center in Corpus Christi, Tex. As a result, each transport aircraft now carries more helicopters per trip than was possible before. The bigger load reduced shipment cost per helicopter by 38 percent. Their idea saved the Army \$604,000 in fiscal year 1968 and will save an additional \$2.8 million in fiscal year 1969.

Mrs. Barbara M. Grant
Naval Air Systems Command
Washington, D.C.



Mrs. Barbara M. Grant, a contract negotiator for the Naval Air Systems Command in Washington, D.C., was a key member of a Navy procurement team that looked into the high cost of power transmissions for a type of aircraft engine. The team found that the engine manufacturer had been subcontracting for this transmission. By negotiating directly with the engine manufacturer's supplier, the Navy eliminated the middleman, reduced the price of the component, and saved \$1.8 million in fiscal year 1968.

Mr. Raymond F. Brownlee
U.S. Army Ammunition
Procurement & Supply Agency
Joliet, Ill.



Mr. Raymond F. Brownlee of the Army Ammunition Procurement and Supply Agency in Joliet, Ill., found that approximately 2 million rounds of 40 millimeter anti-aircraft cartridges with defective tracer elements could be used for ground-fire where the tracer characteristic was not needed. As a result of his finding, a \$10.6 million project to repair the tracer elements was cancelled.

Mr. John L. Brock
Warner Robins Air Force
Base, Ga.



Mr. John L. Brock received over \$5,000 for suggestions through the Incentive Awards Program during his 26-year career in the Civil Service. He is currently an inventory manager in the Warner Robins Air Force Base, Ga. Mr. Brock's idea for renovating the worn barrels of 20 millimeter guns saved the Air Force \$1.5 million in fiscal year 1968 and will save an additional \$4.5 in fiscal years 1969-70.

COST REDUCTION AWARDS

S. Sgt. Dolphus Milton, a Vietnam veteran conceived of a more economical procedure for storage of trucks (pending their issue to troops) while he was stationed at the Marine Corps Supply Activity in Albany, Ga. By discontinuing the longstanding practice of disassembling and separately storing wooden equipment—such as troop seats and side racks—the Marine Corps will save \$29,000 in labor costs and release 36,000 square feet of valuable storage space for other use.



SSGT Dolphus Milton
*Marine Corps Base
Quantico, Va.*

Mr. Joe L. White, an engineer with the Chesapeake Division of the Naval Facilities Engineering Command, was a key participant in a value engineering study to improve the design of barracks for enlisted men. The result was a design that provides more attractive and homelike accommodations. At the same time, the design simplified the construction and reduced the costs. The new design saved \$647,000 on four building projects in fiscal year 1968 and will save an additional \$3.2 million on 18 more projects scheduled for construction in fiscal year 1969.



Mr. Joe L. White
*Chesapeake Division
Naval Facilities Engineering
Command, Washington, D.C.*

Mrs. Lois M. Young is employed by the Defense Supply Agency as a quality control assistant at the Defense Electronics Supply Center in Dayton, Ohio. It was her idea to arrange for the return, testing, and reutilization of serviceable magnetron tubes that otherwise would have been discarded during the overhaul of radar sets. Her action saved the Department of Defense \$209,000 in fiscal year 1968.



Mrs. Lois M. Young
*Defense Electronics Supply
Center, Dayton, Ohio*

Mr. Alfred A. Agee is a supervisory packing specialist at Hill Air Force Base in Utah. He designed a new container and developed a more efficient packing arrangement for shipping fin assemblies for 500 lb. bombs. His ideas reduced packing and transportation costs 59 percent. As a result, the Air Force saved \$2.1 million in fiscal year 1968 and will save an additional \$6.5 million in fiscal years 1969 and 1970.



Mr. Alfred A. Agee
Hill Air Force Base, Utah

Mr. John Gerritson is a sheet metal worker at the Defense Supply Agency Depot in Ogden, Utah. Under that Agency's Zero Defects Program, he corrected a design defect in the controls that operate overhead doors in warehouses. His idea prevented malfunctions and—as a result—eliminated work delays, safety hazards, and repair costs totaling \$9,000 for fiscal years 1968 through 1970.



Mr. John Gerritson
*Defense Supply Agency
Depot, Ogden, Utah*

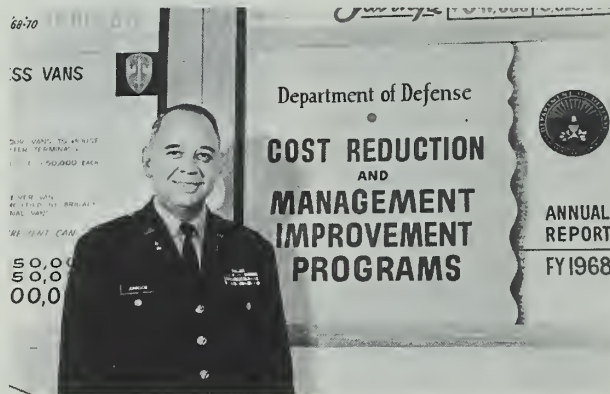
Unit Recipients of



Maj. Gen. John M. Wright, Jr., USA
*Commanding General, U.S. Army Infantry Center
 Fort Benning, Ga*



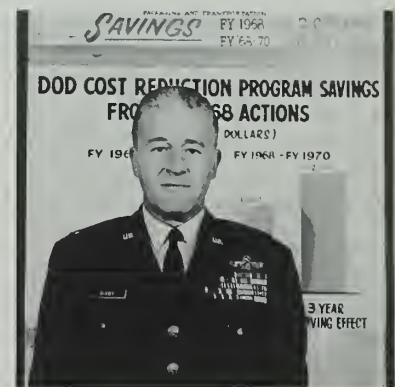
Brig. Gen. Robert R. Fairburn, USMC
*Commanding Officer, Marine Corps Supply Center
 Albany, Ga.*



Col. Gerald Johnson, Jr., USA, Commanding Officer
*Defense Contract Administration Services Region
 Defense Supply Agency, Philadelphia, Pa.*



Capt. William H. Shockey, USN
*Commanding Officer, Naval Air Rework Facility
 North Island, San Diego, Calif.*



Col. Orin M. Bixby, USAF
*Commanding Officer, 840th Air Division
 Tactical Air Command, Lockbourne Air Force Base, Ohio*

COST REDUCTION AWARDS

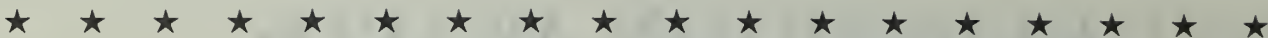
“This Center displayed managerial excellence in administration of the Cost Reduction Program that far exceeded the standard ordinarily expected of an organization whose prime mission is to train men for combat and as a result, achieved 250 percent of its allocated cost reduction goal for fiscal year 1968. This exemplary performance—achieved under the inspiring leadership of the organization’s Commanding General, Maj. Gen. John M. Wright, Jr.—resulted from an exceptionally effective system for instilling an appreciation of cost reduction principles at all levels and from a constant focus on cost awareness throughout the Center. Management improvements instituted by this organization saved the Department of the Army \$1,997,800 in fiscal year 1968 and will save an additional \$5,891,400 in fiscal years 1969–1970.”

“While speeding repair of major equipments urgently required in Southeast Asia, this organization—under the dynamic leadership of its commanding officer, Brig. Gen. Robert R. Fairburn—instituted sufficient management improvements in fiscal year 1968 to exceed its allocated cost reduction goal by almost a two-to-one ratio. This remarkable achievement resulted from the commander’s intense personal interest in every phase of the Cost Reduction Program, the highly effective integration of other types of management improvement programs into the Cost Reduction Reporting System, and extensive application of cost reduction principles throughout the Center. The management improvements effected saved the Marine Corps \$726,000 in fiscal year 1968 and will save an additional \$942,000 in fiscal years 1969–1970.”

“Although working under the intense pressure of assuring the quality and expediting the delivery of materiel urgently required in Southeast Asia, this organization achieved a 5 percent reduction (\$1.4 million) in its budget, enabled buying offices to save over \$4 million on purchases, and efficiently monitored contractors’ cost-reduction programs that saved the Department of Defense more than \$70 million. This noteworthy record—compiled under the leadership of the Region’s commanding officer, Col. Gerald Johnson, Jr., USA—is attributable to the constant emphasis on economy by the organization’s managers, outstanding gains in productivity, strong accent on value engineering principles, and extraordinarily complete integration of all management efforts into the Cost Reduction System.”

“While meeting tight schedules for overhauling first-line aircraft for use in Southeast Asia, this organization—under the vigorous leadership of its commanding officer, Capt. William H. Shockey—innovated sufficient management improvement actions in fiscal year 1968 to reduce its operating costs 8.6 percent that year and 13.0 percent in the period fiscal year 1969 through fiscal year 1970. These management improvements—accomplished by highly motivated personnel throughout the organization and assisted by a well-organized program to cross-feed ideas—saved the Department of the Navy \$8.5 million in fiscal year 1968 and will save an additional \$26.9 million in the period fiscal year 1969 through fiscal year 1970.”

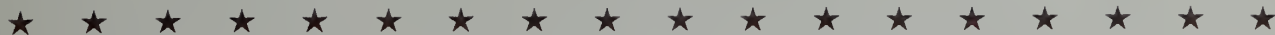
“Despite the rapid personnel turnover inherent in its mission of training tactical air crews for Southeast Asia, this organization—under the superior leadership of its commanding Officer, Col. Orin M. Bixby—saved 4 percent of its fiscal year 1968 Budget and exceeded its fiscal year 1968 cost reduction goal by 60 percent. This outstanding record was attributable to imaginative techniques for cross-feeding of management improvement ideas, highly motivated personnel at all levels, and efficient administration of the cost reduction program. Management improvements effected saved the Department of the Air Force \$371,000 in fiscal year 1968 and an additional \$438,000 in the period fiscal years 1969–1970.”



Saigon, September 3, 1968—Gen. Goodpaster (center) reviews MACONOMY results with representatives of the four services and MACV Comptroller, Col. M. E. Richmond (at extreme right). Project MACONOMY saved the DoD \$512 million in fiscal year 1968.



Washington, October 8, 1968—President Johnson listens attentively as Secretary Clifford (not in photo) introduces (left to right): Sgt. Maj. Elmo A. Burns, USMC; Capt. Robert E. Beaver, USAF; Chief Storekeeper Charles W. Cutright, USN; Lieut. Lee E. Grimsley, USA. These four men accepted Project MACONOMY awards on behalf of their respective services.



MACONOMY AWARDS

United States Army, Vietnam



Seventh Air Force



“Despite the most trying conditions conceivable in a combat zone, the officers and enlisted personnel . . . achieved significant savings in materiel and manhours in fiscal year 1968 by conscientiously applying the efficiency principles of Project MACONOMY in their management of supply, finances, and manpower. Their innovative management improvements substantially contributed to the \$512 million in cost reductions recorded for all Services in Vietnam under Project MACONOMY.”

United States Naval Forces, Vietnam



Third Marine Amphibious Force



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